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ON SOME DEFECTS

IN

GENERAL EDUCATION:

BEING

THE HUNTERIAN ORATION

OF THE ROYAL COLLEGE OF SURGEONS FOR 1869.

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BY

RICHARD QUAIN, F.R.S.

PRESIDENT OF THE COLLEGE.

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MACMILLAN AND CO.

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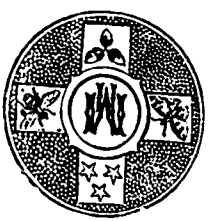
PREFACE.

HAVING had the honour to be charged by the College of Surgeons with the delivery of the biennial Hunterian Oration in the year 1869, I availed myself of the occasion to bring under notice some defects in the general education of the country, which in my opinion affect injuriously all classes of the people, and not least the members of my own profession. The Address then delivered is now published, according to usage. The earlier pages of it contain a short notice of the genius and the labours of John Hunter; but the subject of Education will be found to occupy the larger part—from page 12 to the end.

In order to justify the statements of fact, and to support the opinions I have advanced, I have added notes; a few in the form of foot-notes, but

the larger part following the text (pp. 87—112). The notes are taken from the 'Reports' and the 'Evidence' published by Royal Commissions specially appointed to inquire into the state of Education and the principal Educational Institutions throughout the country, and from the published opinions of men who, for the most part, hold, or have held, eminent positions in connexion with public education.



ON SOME DEFECTS

IN

GENERAL EDUCATION.

HUNTERIAN ORATION.

DEFECTS IN GENERAL EDUCATION.

Object of the Address.

WHEN arrangements were made for the meetings of which one occurs to-day, the intention was stated to be that of "showing a lasting mark of respect to the memory of John Hunter, which shall, at the same time, express the very high sense they (the founders) entertain of the very liberal conduct of the Royal College of Surgeons in supporting and preserving the Hunterian Collection." It was at the time doubtless contemplated that the respect so set forth should be shown chiefly by a discourse upon the labours and the merits of the founder of the Museum. But, since that period, almost every aspect of the genius and industry of Hunter has been placed before such meetings as the present. The story of his life has been told more than once; his writings have been collected and made easily accessible; above all, the collection in the Museum has been described in the catalogues

prepared for this College. Considering, then, what has been published in those many volumes, and what has passed from those volumes into the common knowledge of our profession, I feel that I could but borrow from one source and another already in print, were I to dwell at any length upon the labours and the influence of Hunter. Nevertheless, some few facts may be stated—stated again, if it must be—for there will always be facts in the career of one so original, and so singularly placed, to fix the attention again and again of those looking at all narrowly into his history.

Having at the outset of his career worked most assiduously during ten years in assisting his brother—as a teacher of anatomy—and in the hospital,[1] Hunter became unwell, and a warmer climate being advised, he sought and obtained an appointment as surgeon in the army, which at the time was on active service. Two years, 1761-63, were very profitably spent at the seat of war. Observations were made which resulted in the work on gunshot wounds.[2] Those few busy years were occupied also with that other pursuit which, in combination with the observa-

With the Army.

[1] His custom was to work in the dissecting-room during the winter, and in the hospital during the summer months.

[2] "A Treatise on the Blood, Inflammation, and Gunshot Wounds." Vol. iii. of "The Works of John Hunter, F.R.S." Edited by J. F. Palmer.

tion of disease, was ever after to engage all his attention—"A manuscript catalogue in Mr. Hunter's handwriting, probably written soon after his return from Portugal in the year 1763, briefly defines the nature of about 200 specimens of morbid structure, and of others marked beasts, lizards, and snakes—the specimens of natural history collected for the most part in Portugal, Spain, and Belleisle. This was the germ of the future Hunterian Collection, and the foundation of its several departments."[1] And now the Army Surgeon, with 200 preparations arranged in order, had formed the plan of his life. In the language of one of his pupils, he returned to England from the army "with his mind teeming with knowledge and full of great designs, determined to display the structure and to investigate the functions of living beings in general in the states of health and disease." ... "He allowed himself but five hours' daily rest during the remainder of his life."[2] He had to create his own museum, to procure all the materials, to bear all the expenses.

The germ of the Museum.

Hunter's plans.

[1] Richard Owen, F.R.S., in "Descriptive and Illustrative Catalogue of the Physiological Series contained in the Museum of the Royal College of Surgeons," vol. v. p. 9. 1840.

[2] "Physiological Lectures, exhibiting a General View of Mr. Hunter's 'Physiology,' . . . delivered before the Royal College of Surgeons in the year 1817, by John Abernethy, F.R.S." p. 11. 1817.

Dependent on his own resources.

What was supplied to other naturalists from the national funds, as to his contemporaries, Buffon and Daubenton, in France (there were no naturalists in England), Hunter had to procure by his own exertions in the practice of his profession as a surgeon: so that during the rest of his life he may be said to have done the work of two professions, two occupations, which would in that time, as now, amply employ two vigorous minds. Withal he pursued his course alone, without help, without even the approval or sympathy of other men. "Few," we are told, "perceived the ultimate aim of his pursuits." "His inquiries into the structure of the lower kinds of animals were regarded as works of unprofitable curiosity, and no one felt an interest in them: therefore (continues his pupil), without the solace of sympathy or encouragement of approbation, without collateral assistance, did he labour to perfect his designs."[1] And so he continued to the end.

As Physiologist and Surgeon.

His aim was different from that of other men cultivating natural science, and his means were different. He stood alone while living, and his name stands now alone, as that of the first and greatest Physiologist and Surgeon combined, of all time. It might be truly said of Hunter, in some sort as has been written of one of the

[1] Abernethy, *loc. cit.*

foremost of his contemporaries, one great with a very different kind of greatness,—he was distinguished by qualities great in their separate excellence, unrivalled in their combination.

Museum long not fully appreciated.

Hunter's greatest work—the Museum, the basis of all his other works, that which has been progressive in other hands—was not fully appreciated by any one during his life, nor, indeed, till several years after. He himself and his immediate pupils recognised no other object in the collection than that of ascertaining the functions of organs, or physiology, with the sole aim of applying that knowledge to the advancement of practical surgery. Hence, when the President of the Royal Society, after Hunter's death, was asked to use his influence with the Government in order that the collection might be purchased for the State, he declined to do so. "Had I," he wrote, "thought my friend John Hunter's collection an object of importance to the general study of natural history, or indeed to any branch of science except to that of Medicine, two years would not have elapsed without my having taken an active part in recommending to the public the measure of purchasing it."[1]

Opinion of Sir J. Banks

1 Reply of Sir Joseph Banks to Lord Auckland in "The Works of John Hunter." Edited by Palmer. Vol. i. p. 141.

Several years had elapsed after Hunter's death when the Parliament instituted an inquiry respecting the Museum, and

In possession of College of Surgeons.

It should, however, be borne in mind, that at that time the collection was not adequately displayed for examination, the whole having been then crowded up into a small space. Moreover, there was no catalogue. When the Museum came into the possession of the College of

Its condition.

Surgeons, though there were many very important notes and memoranda written or dictated by Hunter, and though the excellent Mr. Clift, Hunter's assistant, who possessed much acquaintance with the collection and its founder, continued his services to the College, there was no

No Catalogue.

exposition of the whole. Indeed, with regard to no small number of the objects, there was not any written indication of their nature—nothing to serve as a clue respecting them, beyond their position among other objects.[1]

decided on purchasing it. In the interval the chief Minister of the day, Mr. Pitt, had been applied to, to exercise his influence towards that object. He refused his assistance, adding "Buy preparations! I have not money enough to buy powder." Ibid. p. 137.

In somewhat the same spirit, and under the same circumstances—war being then afoot—the King of Prussia, when solicited to procure for the State an anatomical museum, the germ of the present Museum of the University at Berlin—Walther's, I believe—absolutely refused, until he was assured that the objects in the collection would give material help in teaching surgeons for the army; whereupon he immediately ordered the purchase. This fact is mentioned on the authority of a personal statement to me in the Museum many years ago by Professor Müller, who was then its Conservator.

[1] "Works," vol. i. p. 155.

Difficulty of forming the Catalogues.

Nor were there any men who, by reason of work already done or knowledge already acquired, could have been invited to prepare catalogues, for throughout the country there was no school of natural knowledge—no recognition of such knowledge in any place of education. There was no collection like Hunter's—nothing like it, or second to it—in which the necessary acquaintance with the subjects could have been acquired. Hence a long delay in the construction of the catalogues. Hence those who were to engage in the undertaking had first to build themselves up in knowledge to the level of their work amid the objects they were to expound; and not seldom to undertake new investigations, so as to throw the light of other facts on what was obscure. In short, the expositors had to educate themselves in the Museum, and even add not inconsiderably to the collection, in order adequately to accomplish the task of the catalogues. Some understanding of the extent and various kinds of the knowledge illustrated in the Museum may be formed from the fact that the labours of several editors—men of eminent ability and varied scientific pursuits—were combined to accomplish the work. The term 'catalogue,' in truth, but imperfectly expresses the scientific work contained in those many volumes.

Recent judgment respecting Museum and Catalogues.

When at length the exposition was completed, the judgment formed by naturalists of the scientific value of the Museum was very different from that expressed by the President of the Royal Society in Hunter's time. In his address to "The British Association for the Advancement of Science" in August last, the President of the Association, treating of museums and their value for the instruction of the people, after speaking of his obligations in early life to "that now unrivalled series of catalogues," and personally to one of the editors, or authors more properly, Mr. Owen, continues in these words: "From the Museum of the Royal College of Surgeons the national and provincial museums of England have much to learn and to copy, and, thanks to the wisdom and munificence of the Council of the College, and to the zeal and ability of the present Conservator, Mr. Flower, it retains the position it attained thirty years ago, of being the best and richest institution of the kind in Europe." [1]

Meanwhile, Hunter's Museum has long ceased to count for more than a portion of the whole, insomuch that now the original collection is computed to constitute one-third of the present

[1] "Address to the British Association for the Advancement of Science, by the President, Joseph D. Hooker, at Norwich, 1868," p. 13.

Improvement continuous.

Museum of the College of Surgeons. Much progress then has been made. Progress has been continuous; and, indeed, to preserve the character of the Museum, progress must be continuous. It must advance with the advance of knowledge. I would point your attention to a single example of progress recently made—made under my own observation—made without adding to the stores of the College. From a large number of objects preserved in the store-rooms—bones of animals insufficient for the construction of skeletons—individual pieces have been selected and placed together in regular succession, so that the history of the form which any single bone assumes throughout the vertebrate series of animals is seen at a glance. With the help of this arrangement, the place in nature and the natural affinities of any single bone or part of a bone, in the hands of an anatomist or palæontologist, will readily be found. I need not dwell on the significance of facts so arranged. The harmony of plan in nature with exceeding diversity of detail, associated with corresponding diversity of function, will at once occur to those whom I have the honour to address.[1] The idea

[1] A foreign naturalist visiting the Museum a month ago remained for a time silent before a part of the series, while apparently the whole process of thought suggested to his informed understanding by those ordered facts passed through his mind. He then said, 'How eloquent it is!' (*Que c'est éloquent!*)

of so converting to a useful purpose what before lay unused originated with the present able, thoughtful and conscientious Conservator, Mr. Flower; and by him the whole arrangement has been carried out.

Cost of. While progress has thus been made, while the collection has become threefold larger, while the catalogues have been completed, you will not expect that all has been done without proportionate expense. A short statement will serve to exhibit this not unimportant part of the subject.

	£	£
The State paid for the purchase of Hunter's Museum, and in contributions towards the building, in sums spread over fifty years		57,000
This College has paid for buildings—the greater part being appropriated to the Museum	87,000	
For the maintenance of the Museum, for purchase of various additions, and Lectures illustrated by it . .	161,000	
		248,000

The cost of the Museum to the College has in recent years been annually about £2,800.

Library. That necessary complement of a great Museum, the Library, which in its kind is at least proportioned to the extent and value of the Museum, is maintained at a cost of over £750 a year.

As might be expected, the Museum and the

Library are open to the whole profession, and to all scientific inquirers—to the public as well.

I have the less difficulty in referring to the facts now placed under your notice, because I know that the credit of the management, if credit be allowed, and the responsibility, are not to be assigned to those who are now the governing body, but to those able men who in times past devoted much time and thought to the affairs of this College.

Characteristics.

Of Hunter as a Physiologist a few words :— His conceptions of the animal economy far outran the knowledge of his age. It is in reference to his age that every man must be judged. By infinite original labour and far-reaching thought he did all that man could do to make organs themselves, observed on the largest scale, in the various phases they present in the animal kingdom, and in the changes they undergo in individual bodies from time to time, explain their functions; not without the aid of experiments well devised to settle or to widen doubts and thoughts suggested by anatomical inspection. Much beyond this he could not go, for he lacked that knowledge of Nature which physicists and chemists have gained for us since his time. He was well stricken in years when the first great step was made in animal chemistry —when Lavoisier, going on where Black had

Natural Science in his time.

Recent progress. Chemistry of life.

stopped, gave to the world his solution of the chemistry of respiration. The chemistry of life, though it be less than a hundred years old, and in many of its greater triumphs less than half that age, has made vast additions to our knowledge of respiration, of digestion, of oxidation working its effects throughout the system. By the labours of chemists and physicists, or of physiologists working by chemical and physical methods, many phenomena, before vaguely assigned to vital action or to a vital principle, have been shown to be the results of complex and yet ordinary chemical or physical processes. Year by year the line which marks, or is supposed to mark, the boundary of the kingdom where vital force reigns absolute has been driven farther and farther back; while in these later years the doctrine of the "Conservation of Force" has passed the limits, and proclaimed the kinship and convertibility of all the forces of nature of what kind soever.

Physiology and other sciences.

Now, the advances in physiology are only a small portion of those which have been made in various directions under the influence of the same sciences—physics and chemistry. Other sciences also have been equally advanced at the same time—astronomy, geology, all natural sciences, in short, having made marvellous additions to our stores. But of all this knowledge

of Nature and Nature's laws our national education takes no heed. Of no class of our people does the general instruction include, as an essential part of it, the natural sciences in any form; and hence general education throughout the country is insufficient for the purposes of any class of the community.

Defective education of all classes

To fix attention on the defects in the intellectual training of all classes of the people, and on the hindrances to the removal of those defects, is the main purpose of this address—the sole purpose of the remainder of it. In furtherance of the plan I have traced out for myself, I would first advert, very briefly, to the hindrances which stopped improvement in ancient times. A few facts drawn from the history of one of our own subjects will serve my purpose here; and while the retrospect will perhaps sufficiently illustrate the prevailing spirit of those ancient times, it will at the same time indicate the origin of the system which has existed for centuries, and is still almost unchanged amongst us.

Early intellectual progress.

There had been intellectual progress as early as three or four centuries before the Christian era, under the influence of Plato, Aristotle, Hippocrates, and in the school of Alexandria.[1]

[1] It is recorded that people went from Rome to the school of Alexandria in order to study the human skeleton. In our science

Progress ceases for many centuries.

But from that time (says the historian of inductive science) no material advance was made in science. "What great men had already taught mankind was perverted or forgotten by their degenerate followers. The schools for the philosophers resounded with systems old and new, with wranglings and boastings; but this availed not to urge on the intellectual progress of man, or even to prevent his sliding backwards. The mechanical truths which had been brought to light at an earlier time were overgrown with the rank vegetation of later days, and lost sight of, and were not resumed and pursued till a thousand years and half a second thousand had elapsed. It is a manifest mistake to ascribe the decay of science to the incursions of the northern nations. Science was dead, and literature mortally smitten, before the external pressure was felt. But the study of speculative philosophy, as the business of cultured men, survived. Still the intellectual world grew darker and darker. 'Light after light goes out, and all is night.' In vain do

that school receives its chief distinction from the names of Herophilus and Erasistratus, who were contemporaries (*temp.* about 340 B.C.). Both dissected the human body. The former is reputed to have been the first who did so. Both added much to the knowledge of anatomy by original accurate observation; yet our acquaintance with their labours comes chiefly through fragments preserved by Galen.

the schoolmen of the Middle Ages build system upon system," &c.[1]

State of thought in the schools affects medicine

That condition of the intellect in the schools and among educated men of the period had its influence on the Medical Profession; and, indeed, all history shows medicine reflecting in its various aspects the philosophy of the time. And so it might be expected to do, for the men of that profession had their training in the schools, and were necessarily affected, as others were, by the prevailing system.

Submission to authority

Submission to authority, with its attendant cessation of all real progress in knowledge, is a prominent characteristic of that dark period, and of the mental condition engendered by the mere study of language and of speculations, however ingenious. Reference to the history of a single man will illustrate that statement:—

Galen

Galen lived in the second century. His anatomical works possessed much merit for the time in which they were written; and they became the sole, the unquestioned authority, admitted in all schools up to the sixteenth century. It was then that Vesalius appeared. He is the most remarkable person in the history of human anatomy. At an early age he seems to have

Vesalius:

1 "On the Principles of English University Education," by the Rev. William Whewell, Fellow and Tutor of Trinity College, Cambridge, author of "A History of the Inductive Sciences." Second Edition. 1838.

His character and and labours.

been drawn, so to say, by an irresistible passion towards the study of anatomy. He sought the means of cultivating his favourite science with incredible ardour. In his time, and for long ages, the study of human anatomy was discountenanced and rendered impossible by the customs respecting sepulture and the psychological notions of almost all people—impossible except to a daring enthusiast. Such Vesalius was. "*Per omne genus periculi, perque ferrum fere et ignes, cadavera sibi comparavit,*" says of him the great historian of anatomy.[1] As a teacher, he himself tells us that for a time he had, like other men, been a commentator upon Galen; but, at length having found that the great authority who ruled with unquestioned sway for nearly fourteen hundred years was often in error, having found his description of parts to have been taken, not from the examination of man, but of other animals, he proclaimed his conviction of the existence of many errors in Galen's work.[2] He resolved to write a treatise

Corrects Galen.

[1] "Bibliotheca Anatomica, auctore Alberto von Haller." Tom. i. p. 180. 1774.

[2] "Atq; ita huic uniuersi fidē dedere, ut nullus repertus sit medicus, qui in Galeni anatomicis uoluminibus uel leuissimū quidem lapsum unquā deprehensum esse, multóq; minus deprehendi posse censuerit: quum interim (præterquam quòd Galenus se frequenter corrigit, suamq; diligentiā in quibusdam libris cōmissam, in alijs, postea exercitatior redditus, non semel indicat, contrariaq; subinde docet), nobis modò ex renata dissec-

His treatise on Anatomy

on the structure of the human body, and he completed, before he had reached his twenty-ninth year, that work which is, in fact, the foundation of all works on human anatomy. But now came his miseries. He had examined the human body, he had rebelled against the sovereignty of Galen; he was accused of having opened a living body. He died miserably from shipwreck while making a pilgrimage to expiate the imputation of wrong-doing.[1]

tionis arte, diligentiq; Galeni librorū prælectione, & in plerisqu; locis eorundē non pœnitenda restitutione constet, nunquā ipsum, nuper mortuū corpus humanū resecuisse."—("Andreæ Vesalii Bruxellensis de Humani Corporis fabrica Libri septem."—"Ad divum Carolum quintum . . . Præfatio," p. 4. Basileæ, 1542.)

[1] An illustration or two may be mentioned here of the opposition raised against the study of human anatomy, and of the sources from which it emanated, in the time of Vesalius and many centuries before his time. 1°. Sylvius, a leading professor at Paris, whose teaching Vesalius had followed for a time, wrote a commentary on the labours of his former pupil, which will be sufficiently characterised by the title given to the publication by the author: "Vaesani cujusdam calumniarum in Hippocratis Galenique rem anatomicam depulsio." (1555.) 2°. Respecting the labours of Herophilus, already referred to as having been an ardent and successful student of anatomy in the school of Alexandria, as early as 340 B.C., Tertullian, a convert to Christianity and a father of the Church, so named, wrote (*temp.* about 150 to 200 A.D.) a judgment, which has found a place in several histories of medical science, and which may be quoted once again on account of the evidence it affords of the spirit of the time:—"Herophilus, iste medicus aut lanius, qui sexcentos homines exsecuit ut naturam scrutaretur; qui hominem odijt ut

Example of in London.

But it may be said that was a solitary case, from which, as a solitary case, no reasonable inference may be drawn. Not so. About the same time, in the year 1559, here in London, a Doctor of Medicine of Oxford was summoned before the College of Physicians, on the accusation of one of the Court Physicians of having stated that Galen had erred; and in the citation it was set forth, that if he had not given a satisfactory reply to the complaint before a certain time, he was to be imprisoned ("*in carcerem deduci*"). However, he made timely submission, and in these terms:—"*Ego Johannes Geynes fateor Galenum, in iis quæ proposui contra eum, non errasse.*"[1] And so we have seen how, under the system prevailing in the schools, progress was stopped for fourteen hundred years—how the authority of a name, of a book, reigned absolutely, and even over the minds of those ministers of Nature, anatomists and physicians.

The best use of any part of the history of the past is that it should afford us guidance as to the present and the future. Has the lesson, which a glance at two different periods in the

noscet; nescio an omnia interna ejus liquido explorarit, ipsa morte mutante quæ vixerant, et morte non simplici, sed ipsa inter artificia exsectionis errante."

[1] "The Roll of the College of Physicians of London, &c." by William Munk, M.D., Fellow of the College. Vol. i. p. 57. London, 1861.

history of knowledge and of intellect teaches, received any application in our system of school and college instruction? That history has not, I fear it must be answered, been permitted to exercise any useful influence whatever.

Defects of.

It is believed by many who are practically conversant with the subject, and I most fully share the belief, that the early part of life, the school time, has long been spent, and is spent, in pursuits which minister but little to the culture of the mind, or to the communication and reception of knowledge useful to any class of society in proportion to the time consumed.[1] But—and I make this statement very deliberately—it is at that early period of life that the first step, the almost, if not altogether, indispensable step in healthy progress, must be taken, whether in our profession or in the world at large. The early training fitted for those intended for the medical profession cannot be parted, even in thought, from the early training of those who are to be engaged in the legislative profession, the clerical, the legal, or any other

Training in early life.

[1] "Of the time spent in school by the generality of boys, much is absolutely thrown away as regards intellectual progress, either from ineffective teaching, from the continued teaching of subjects in which they cannot advance, or from idleness, or from a combination of those causes." ("Report of her Majesty's Commissioners appointed to inquire into the Revenues and Management of certain Colleges and Schools, and the Studies pursued and Instruction given therein." Vol. i. p. 26. 1864.)

profession. Nor can it be separated from the instruction of those in any sphere of society among the so-called educated classes.

Divided into two parts.

At the threshold of any inquiry into this subject, reference to the chief places of instruction for young people is necessary; for the system pursued in the chief colleges and schools controls the teaching of all the youth of the country. For the full appreciation of the public school system, though to most of those assembled here it be familiar as household words, it ought to be looked at, however briefly, as a whole, before any part is put to the question. The system might, for my present purpose, be said to consist of two divisions—all the out-of-school proceedings being distinguished from the instruction in school.

Judgment of foreigners.

By foreigners the customs of the playground, with the domestic arrangements in masters' houses, have been highly appreciated, the more highly because of the contrast with the system in their own schools. Some parts of our own system, which have received the special notice and, on the whole, the approval of the same close observers, may be enumerated as follows :—

Out-of-school part.

The situation of the college or the school, away from large towns and their neighbourhood, "amid fields and shrubs and trees, which (they tell us) the English love so much,"—that situa-

tion instead of one, as in their land, between two streets of a large town: the vigorous pastimes: the freedom of the scholars to range at will in the country with only the limits as to time and to duties, instead of confinement within walls and the formal walk abroad rank and file at stated periods in the streets of a city: the exercise of authority, too, by the elder boys, the submission to that authority by the juniors—"an economical but insufficient arrangement for preservation of order," say French Commissioners, themselves teachers in schools—"an admirable preparation for the business of life," says a French statesman, for that self-government is in strong contrast with the espionage of an inferior class of ushers by day and by night among our foreign neighbours.—The absence of control by the central government of the country in schools and colleges, all officials being elected by their peers, even "as at the Institute of France," was among the characteristics most valued in the foreign statesman's view—he being a member of the Institute, as he terms it, "one of the forty,"—the whole system, in his estimate of it, leading to independence of character and self-reliance. "There is," says the statesman alluded to, the Count de Montalembert, "a sight in England rarer and grander than its parliament; a firmer guarantee for the stability of English

Opinions of French writers.

M. de Montalembert.

society than its representative government. Other nations may imitate more or less closely her political institutions, they cannot create the faintest copy of the colleges and schools."[1] The French Commissioners who last year reported on the schools of England and Scotland, and may be now engaged in completing their proposed inquiries with respect to the Universities, seem to support M. de Montalembert's conclusions as to the out-of-school system, with the important exception of the "idolatry of athletic sports," which they condemn. But those Commissioners, nevertheless, conclude that "the out-of-school" part of our system, though well fitted to our condition, political and social, would not suit the genius of the French people, to whom, as "a military nation," the strictly military arrangements of their own schools are, they say, best adapted.[2]

French Commissioners.

[1] "De l'Avenir politique de l'Angleterre," par le Comte de Montalembert, l'un des quarante de l'Académie Française, p. 153. Third Edition. Paris, 1856.

[2] "Nation sociale et militaire, nous nous plions volontiers à une discipline rigoureuse. Le collége français est un régiment, fier de son uniforme, docile à l'autorité tout en murmurant contre elle, marchant au son du tambour et emportant au pas de charge grec, latin, histoire, mathématiques. Cette jeune armée, grâce à la vie commune, vit économiquement, comme il convient à une nation bourgeoise ; elle a ses sous-officiers dans la personne des maîtres répétiteurs ou maîtres d'étude." ("De l'Enseignement secondaire en Angleterre et en Écosse : Rapport, etc., par MM. Demogeot et Montucci," p. 593. Paris, 1868.)

This view of the interior of another system will, I doubt not, rather make us the more content in the main with our own, but, I hope, without making us insensible to the grave evil of its excesses. Of these something hereafter.

I will pass on to our school instruction:— Of this the French Commissioners do not report their approval. Indeed, their conclusion is that we have long been stationary here, while the world has been moving on. The words "*immobile Angleterre*" are applied to our educational system, and we are said to be a "self-taught" as well as a "self-governed" people.

French Commissioners.

If any justification were needed for occupying your attention with this subject, it would perhaps be found in the fact, that several extended inquiries into the condition of colleges and schools have been instituted by direction of the sovereign;—it would be found in the large number of large well-filled volumes upon the table devoted to the results of those inquiries, and in the number and position of the public men who conducted them. But most of all would I rest my justification on the importance of the subject; on my own conviction of its importance to the future well-being of the whole community, and of our profession no less than any other part of that community.

Why subject taken up here.

The system of instruction was instituted about the time of the foundation of several of the schools, in the sixteenth century:—the classical languages and grammar being the subjects to be taught. The phrase "grammar school" was used, and that phrase was interpreted by our highest law-court, even in this century, to mean the teaching of the grammar of the classical languages. At the time the schools were founded, Latin was the language of the learned, written and spoken. Even a century later John Milton, who wrote and spoke Latin with much skill—how he wrote English no one need say—has told, in the story of part of his own life, that, when about to visit the Continent of Europe in early life, he practised the foreign pronunciation of Latin in order to communicate the more easily with the learned of various continental countries.[1]

Latin language spoken

So, too, all writing—for instance on anatomy and other medical subjects—at the same period,

[1] Of teaching boys he says to "Master Samuel Hartlib," to whom the tract is addressed: "Their speech is to be fashioned to a distinct and clear pronuntiation, as near as may be to the Italian, especially in the vowels. For we Englishmen being far northerly do not open our mouths in the cold air wide enough to grace a southern tongue; but are observed by all other nations to speak exceeding close and inward: So that to smatter Latine with an English mouth, is as ill a hearing as Law French." ("Of Education." The Prose Works of John Milton, vol. ii. p. 385. London: Pickering, 1851.)

and for many centuries before it, so far as there was any writing on anatomy and medicine, was in the Latin language. Vesalius in the sixteenth century, Harvey and Sydenham at a later period, and most writers down to the middle of the last century, used Latin. All the writings of the admirable Haller, including his great "Elements of Physiology," were in the same language. It is curious to notice how even the names of writers were then translated into a classical form—usually a Latin one. It was the custom of the time. Thus, Dubois, the contemporary of Vesalius, became Sylvius, Rindfleisch Bucretius, Stenson Stenonis, and so forth, while Wittins, his family being of a place named Wesel, became Vesalius. But in that olden time, in the whole of the so-named Dark Ages, there was a motive stronger than any consideration for the learned and learning to enforce the all but exclusive cultivation of the Latin language. That motive existed in the fact that Latin was considered the language of orthodox theology. In the beginning of the sixteenth century, Colet, then Dean of the Cathedral in this neighbourhood, having founded and endowed the school known as St. Paul's School, was accused, by the Bishop of London of the day, of heterodoxy, one of the facts alleged in support of the accusation being that he had translated

Used in books.

The language of orthodox theology

the Lord's Prayer into English for the use of the school.[1]

During all the time when Latin was the language of the learned, the language of orthodoxy and of prayer, that language was indispensable to all but the commonest purposes of life; and one is not surprised to see that the classical languages had the foremost place in school instruction then. But now, when the learned no longer try to speak Latin or to write Latin, the very same system is continued, and its continuance as the chief means of instruction is justified by various arguments. Thus it was stated before one of the Royal Commissions by several witnesses,—schoolmasters engaged all their lives as learners and teachers under the present system, that the great object to be attained in training youth at school is not to communicate to them interesting or useful knowledge so much as to strengthen their minds by some instrument of mental discipline; and it was said that to accomplish that result (the discipline of youthful minds) no mental exercise is comparable to the study of the Latin Language and Grammar.

Disused in writing and speaking.

That reasoning, however, and all reasonings of the kind are but arguments after the fact. They are used now in support of a system long

1 "Annals of St. Paul's Cathedral," by Henry Hart Milman, D.D., late Dean of St. Paul's, London. 1868.

in existence, which had been formed on entirely other grounds. But to look a little more closely into the details. As to Grammar:—It has been defined the logic or the philosophy of language. It is a generalization of all known facts. It is founded upon the accurate knowledge of the details of the language. Grammar would be interesting and useful to one who had already acquired an extensive acquaintance with the language, and would help such a person to a mastery of it. But to force a young boy to commit to memory the abstract rules, which are a series of inductions from a detailed knowledge of that multitude of facts, before the facts are known, is unnatural and irrational.

Contrasted with Natural Science.

The relative influence of the study of the Latin Language and Grammar as compared with the study of Natural Science as an instrument of education was much discussed before some of the Royal Commissions, nearly always in the judgment of the witnesses to the decided disadvantage of Natural Science.[1] The discussion was worthless. To compare two things so utterly dissimilar serves no

[1] "If there were no more to be said than that scientific education teaches us to think, and literary education to express our thoughts, do we not require both? And is not any one a poor, maimed, lopsided fragment of humanity who is deficient in either?" ("Inaugural Address" (St. Andrews) by John Stuart Mill. 1867.) See note *post*, p. 93.

useful purpose. Language and a knowledge of nature do not exclude one the other. Language is not knowledge so much as the instrument of receiving and communicating knowledge. We cannot part the two. We ought not to compare or contrast them. Of language I speak as the term is used by the bulk of mankind, excluding from consideration that very small number of persons—scholars, who make the study of words and language the business of their lives—the teachers and students of the science of language, Philology.

As instruments of mental discipline.

In proof of the efficiency of the present school system—of the mental discipline and the high mental culture which are its results—it is said, "Look to the fact that the ruling men of England—the great statesmen, the great orators—all, or nearly all, were developed under that system." Under it they must have been trained in early life, for there was no other system. Was there not, however, something before and beside the use of the Latin Grammar and the Latin Language to accomplish the greatness of those men—their genius, their industry? Would not those men have been great by virtue of their genius and industry under any system—without any system? Moreover, if the system is to have the credit of the greatness of the few great men, must it not take under its charge the want of

greatness, even the dulness or the ignorance, of very large numbers?

In order rightly to determine how far the instruction in schools and colleges has attained the proper object of instruction, we should seek to know, not how the small minority of able and industrious men have seemed to be affected by it, but how the majority, the many, have come from under its influence; and that may be known from evidence given before several bodies of Royal Commissioners. A few facts gleaned from the large store brought together by the Commissioners will help us here.

Progress in schools tested:

The quality of the scholarship of large numbers of youths from the public schools upon their arrival at the University of Oxford is shown in the evidence of the Dean of Christchurch and others quoted by Commissioners. Thus: "At the matriculation examinations of the colleges very few can construe with accuracy a piece from an author they profess to have read. We never try them with an unseen passage. It would be useless to do so. . . . The answers we get in Arithmetic do not encourage us to examine them in Euclid or Algebra. . . . In the examination named 'responsions,' which occurs so early at the University 'that it is a test of school work'—a very low test—out of 168 candidates on one occasion, 67 failed. Of those it

at Oxford;

has been proved, by analysis of the papers, that 43 failed so universally as to show that they were utterly unfit to undergo any examination whatever." [1]

at Cambridge;

So much as to Oxford. From the University of Cambridge there is evidence, also given before Royal Commissioners, to the same effect. "I have observed," says a Lecturer at St. John's College, "such deplorable ignorance on the part of a great many young men who enter the University of Cambridge (I must confine my remarks to those I am acquainted with) that I think it would be a very valuable thing if they could be taught experimental facts, not at all looking upon that as a part of their intellectual training. *Question* (by Royal Commissioner): But for useful purposes? *Answer:* Yes. *Question:* Do you conceive that the teaching of a natural science could be introduced into the middle-class schools, as well as into the upper schools, without interfering with other studies? *Answer:* I think it could be done. I do not see any very serious objection." [2]

[1] "Report of her Majesty's Commissioners appointed to inquire into the Revenues, &c. of certain Colleges and Schools, and the Studies pursued and the Instruction given therein," p. 24. London, 1864. See notes *post*, p. 87 *et seq.*

[2] W. H. Besant, M.A., Lecturer and late Fellow of St. John's College, Cambridge, formerly Senior Wrangler. Evidence before "Schools Inquiry Commission," p. 150. London, 1868.

The prevailing bias is seen in the inquiry about "interfering with other studies," those other studies—those alone thought to be suited to intellectual training, and therefore not to be interfered with—having nevertheless resulted in "deplorable ignorance on the part of a great many young men," who had been under their influence, almost their sole influence, during several years. In that all but universally prevailing bias among public men in high position, and among teachers in schools and colleges, will be found, I fear, the immovable barrier against any useful alteration of the system.

at London.

In the same way as at Oxford and Cambridge, the Examiner of the University of London reports his judgment of boys' progress at schools: "I think the knowledge which most of them acquire exceedingly meagre. Judging both from the examinations in the University of London and from the examinations I have conducted elsewhere, I have rarely met with boys who can translate the easiest piece of Latin or Greek *ad aperturam libri*. . . . I think that if the boys had acquired a fair knowledge of Latin and Greek there might be something to be said for the present system; but seeing that they learn hardly any Latin and Greek, there could be no harm in trying to introduce some other subjects which they might learn.

"*Lord Stanley:* You think then that there is, at the same time, a somewhat too exclusive devotion to classical teaching, and then that that very classical teaching to which other things are sacrificed is inaccurately and imperfectly carried on?—Yes, that is my opinion."[1]

Few make progress.

Now to follow some of these young people for a short space in their University course:—The number of those who make satisfactory progress is, we are told, very small. The course of the undergraduates who do not seek for honours is, for the most part, "simply a repetition of the school; .... two years being spent in school-work—work proper for the upper forms of a great school."[2]

The Degree in Arts, which a large majority seek to attain, "the pass," is stated to be almost worthless.[3]

[1] William Smith, LL.D., Classical Examiner in the University of London. Evidence before "Schools Inquiry Commission," vol. iv. p. 115. London, 1868.

[2] "Royal Commissioners' Report," p. 24, 1864; and notes *post*, p. 89.

[3] "While the B.A. was conferred for residence alone, as was the case from the Restoration to 1800, it denoted an unknown quantity of culture derived or derivable from four years of pupilary existence. When a pass-examination was instituted, was clearly severed from the honour-examination, and the quantum of attainment designated by the B.A. ascertained, those two letters lost their mysterious significance. It is now well understood that they denote no grade of intellectual cultivation, but have merely a social value. They are an evidence that a youth has been able to afford, not only the money, but, what is

Without dwelling further on the facts which have been put before us, I would state the evidence as to intellectual progress in some of our great places of education in the form of a few numbers:—The proportion of the boys at the chief public schools who pass from those schools to the Universities is a third. The actual numbers in one year were 206 out of 621.[1] Of the students at Oxford, it is stated by the Rector of a college, that those who "are at all within the scope of the scientific arrangements of an academical body cannot be estimated at more than thirty per cent.; and that the remaining seventy per cent. cannot be considered to be even nominally pursuing any course of University studies whatever."[2]

Proportion in numbers:

impossible to so many, the time to live three years among gentlemen, doing nothing, as a gentleman should." ("Suggestions on Academical Organization with especial reference to Oxford, by Mark Pattison, B.D., Rector of Lincoln College, Oxford," p. 236. 1868.)

"The pass-degree is almost of no value; I can speak of this from having myself examined in the Law and History School, and nothing can be more miserable." (C. S. Roundell, Fellow of Merton College, Oxford: Evidence, § 314, in "Special Report, Oxford and Cambridge Universities Education Bill, ordered by the House of Commons to be printed, 1867.") See notes *post*, p. 91.

[1] *Post*, p. 90.

[2] Mr. Pattison, *op. citat.* p. 231, and *post*, p. 91. See "Oxford University Reform, by the Hon. E. Lyulph Stanley, late Fellow of Balliol College, 1869," and *post*, p. 92.—Figures

in highest schools;

Thus, since out of, say, three hundred boys sent to the highest schools of the country, a third—one hundred—proceed to the Universities: and, of the hundred, thirty acquire proficiency in the studies of the place: the proportion of the youth in our most celebrated schools who can be said to receive and to profit by a University education is ten per cent.

Such are the results, as regards what is professed to be taught and learnt at our schools and colleges. Yet not the whole result; for all,

throughout the country.

or almost all, the schools of the country are conducted upon the same system, even those which seldom send a single pupil to the Universities; and we cannot expect that in those other schools the results should be more favourable. With such evidence as to the state of the knowledge of a large majority of our young people in the subjects which they spend all their most active years in learning—or, more correctly,

quoted by Mr. Stanley give the following results:—

579 "undergraduates matriculated in a year," 1868.
352 "took the degree of Bachelor of Arts."

227 "drop out."

Again, of

579, the number matriculated in a year,
168 "take their degree in such a way as to indicate any amount of study."

411 either take a degree indicating no amount of study, or "disappear."

not learning—where shall we hope to find that "mental discipline" so confidently relied on to justify the course of instruction, which has continued in the great schools and colleges almost unchanged for centuries—unchanged amid all the changes in the world around them; relied on to justify likewise the exclusion of all else which an intelligent man ought to know? Very different, I confidently believe, would the results have been, if nature—the works of nature as objects of study, and the natural bent and aptitude of the human mind—had been regarded in the course of instruction.

But we are told that, for sake of the highest culture of the best intellect of the country, it is essential that the system of teaching should not be interfered with. The classical languages and grammar must, it is said, be continued, as the first and the chief subjects of study in youth, in order to keep alive among us the high thoughts and high purposes of which the great writers of antiquity are the true source.[1] And this must

Influence of ancient writers.

[1] More than two hundred years ago, one of our greatest scholars, a schoolmaster as well, wrote thus: "We do amiss to spend seven or eight years meerly in scraping together so much miserable Latine and Greek as might be learnt otherwise easily and delightfully in one year." (John Milton, "Of Education," &c. Prose Works, vol. ii. p. 381. London: Pickering. 1851.)

Similarly, in our own time, the eminent writer already cited finds it still necessary to say: "But I will say confidently that, if the two classical languages were properly taught, there would be

Influence of ancient writings.

be done, though the large majority of our youth have been, and continue to be, intellectually starved by the process. Now, if we are to look chiefly to pagan times, to writings, however excellent, now two thousand years old and more, what comes of the intellectual work of those two thousand years, here and elsewhere? What comes of nearly twenty centuries of Christianity, of our representative government, of our long liberties—the liberty of speech, the liberty of printing? What comes of the work in our schools and colleges, proud of their antiquity, and of their independence of control from without, great in repute and popularity, still greater in wealth? We do not know that the Greeks of old derived from others the high thoughts and high purposes, by the study of which in their works we are told our best intellects are to be elevated. They are said to have had no great intellectual predecessors. They knew no language but their own. They had to create language, and thoughts, and purpose for themselves. With what effect they did so, the homage their writings still receive is indisputable proof. If we must borrow from the great people of antiquity, it would, I submit, be best to imitate the

The Greeks.

no need whatever for ejecting them from the school course in order to have sufficient time for everything else that need be included therein" ("Inaugural Address delivered to the University of St. Andrews, by John Stuart Mill, 1867.")

course they followed. It would be best that the highest intellects among us should cultivate their own language as the Greeks did theirs, should create for us great thoughts, instead of borrowing them. Possibly, then—for I do not know of any evidence that our people are not capable of attaining to any height, intellectual or moral, which any other people has reached—possibly that would be done with the same result as in olden time, the result of giving to the world a richer and more cultivated language, and more of originality, more of elevation of thought and purpose.[1]

Exclusiveness of system.

Besides, the advantage that is gained from the exclusive toil in classical languages might still be gained—probably, too, in greater measure and by a much larger number—if to the study of those languages were assigned the secondary place they ought to have held, at least since our own English took shape, and since Nature and Nature's laws began to occupy the minds of thinking men.

A defence, or excuse, for the inefficiency of the prevailing system—the defence implying the consciousness of its failure—has been rested on the indifference of parents in reference to the education of their sons, whereby teachers want the sympathy and help they have a right to

[1] See note *post*, p. 93.

Indifference and ignorance of parents.

expect in their difficult work. "Much evidence (states a body of Royal Commissioners) has been laid before us, tending to show that indifference and ignorance on the part of parents are among the chief hindrances to education at present. Too often the parents seem hardly to care for education. . . . In fact, many parents need education themselves in order to appreciate education for their children." [1]

I cannot help regarding the indifference and the ignorance of parents set forth by the Commissioners as the direct result of the system of the education of the country, and as the clear proof of its grievous defects. Parents have been trained just as their boys are being trained—according to the same formula. That formula has not included, does not include, subjects which blend with any of the pursuits of life; does not include subjects which men continue to cultivate. The matter of instruction scarcely affects human interests or human feelings. It seldom receives attention at any period of life beyond the enforced attention in early life. No part is progressive. Parents are not likely to go back to the Latin Grammar even as improved in the "Public School Latin Primer," or to the "Subsidia primaria." There is in the repulsiveness and, in large measure, the uselessness of

[1] "Schools Inquiry Commission," vol. i. p. 15. 1868.

the subjects taught in schools, and the keen remembrance of those qualities by parents, enough to account for their indifference as to the schoolwork of their children, without imputing a want of parental feeling. And as to ignorance, if correctly assumed, for it the school-teaching, the educational system, must surely bear its full share of blame.

The system in fault.

Had the work of the school heretofore been, and were it now, bestowed in fair proportion on those things which are present to us through life —our own grand literature for instance, and composition in the mother-tongue—then the schoolboy of old days and the schoolboy of to-day would have much in common in the enjoyment and appreciation of the genius, the wisdom, the high art of our great writers or great orators past and present. Still more: Did the schoolwork include the knowledge of nature in one or more of its branches, the schoolboy of a past time and he of the present time would be enabled to take an interest, an abiding interest in all likelihood, in the facts and principles of a science—in its progress, which never ceases, never will cease,—which always presents new objects for inquiry, new difficulties to be overcome, new triumphs to be achieved by human industry, new laws to be laid down by human genius,—the whole process informing the mind and elevating

it by the nearer approach to complete knowledge :—which, however, never will be complete. For, as there is a desire to know inseparable from man's mind, so there will ever remain something still unknown, something still to know, in every nook of nature. And this may be taken as one of the many distinctions between natural objects and language, or any other thing of human invention. As soon as the schoolwork of parent and child comprises the study of such subjects, there will be no want of sympathy between the teacher and the parent. "Culture," so much spoken of, so little worked out, will then go actively forward; and its influence will, as it ought to do, extend beyond the school, to the home and the family.

Athletic sports:

Yet another fault is complained of as standing in the way of progress in school and college work—the devotion, namely, to athletic exercises. To these, in their proper degree, in so far as they serve for the recreation of a diligent student, as they minister to health and to bodily vigour, thereby promoting energy and self-reliance, no one, least of all one standing where I do now, would desire to object. But

the abuse of:

when athletic exercises become the principal occupation, when they take the place of intellectual labour instead of being its auxiliary, then no thinking man can do otherwise than

object to their excess and misuse, and object very earnestly.[1]

the complaint against examined.

It is not, however, enough to complain of an evil. Its cause and a remedy ought at least to be sought for. And here, since the moral influence of teachers, whether schoolmaster, tutor, or professor, is unavailing to restrain the evil they complain of, we must look elsewhere. There is a natural inclination in early age to active out-door occupation. Young people rush not unnaturally from the irksome drudgery of the school to the playground; for in the school there is little to engage the faculties of the mind then most active. The faculties of observation and inquiry are without object; and being unused become in the end incapable. The gratification of another instinct possesses

[1] ". . . I do think that there is a want of fibre in the present class of undergraduates. I think that athletic sports are becoming a positive nuisance; and, in place of men engaging in the true work of the University, those games and sports are positively almost taking the place of learning. Then I think, to speak generally, you see traces of that in after-life in the professions, and in public life," &c.

The same gentleman being further questioned, replied—"I must say, that in spite of my own natural prepossessions that way (I was myself in the University Eleven), I do lament most deeply what I take to be (which we see not only in the Universities, but at schools and elsewhere) this giving over of people's minds to the idolatry of athleticism. It is one of the greatest mischiefs of the day." (Evidence of C. S. Roundell, Esq., Fellow of Merton College, §§ 273 and 393, in "Special Report, Oxford and Cambridge Universities Education Bill, 1867.")

the mind. So the schoolboy, taught nothing of natural science, knowing no use of the world around, except as it is known to all untaught persons, civilized and uncivilized, except as it ministers to sport or to the pleasure of active exertion, has no other attractive employment than these. Had he been engaged in schoolwork which was not wholly irksome; had he learnt to look with intelligence on natural objects, learnt to think "how and why" things have come to be as they are, and to work out the answer, there would then be, in intelligent observation and the acquisition of attractive and most necessary knowledge, healthful out-door occupations, in various forms. But they do not exist. And so the hindrance to study, much and justly complained of, if it be not the direct result of the defective system of early instruction, is at least fostered by it.

Study of English at highest schools.

We have had full information as to the quality of the knowledge of the classical languages among the youth in our great schools and colleges. I would now inquire how it fares with the mother-tongue? Here, also, evidence is not wanting, and again from the Universities. The

Evidence from Oxford;

Examiner at Oxford, whose evidence is cited by a body of Royal Commissioners, states, of a large part of the undergraduates fresh from the grammar-schools, that "an absence of ordinary

facility in spelling or constructing a sentence in English is among the unhappy characteristics of the class." [1]

from London.

"The schools," says Dr. Smith, "give comparatively little attention to French or English, or other subjects which they might teach with advantage. . . . . Spelling they (the young people examined) are very defective in. That I know from the University of London, because all our examinations are conducted in writing, and the answers are frequently very badly spelt." [2]

Indeed, every examiner, every medical examiner, could bear some testimony to the same purpose from his own experience.

Study of English at University.

Nor is, it seems, the defect of the schoolboy removed altogether by the college course. Even the Degree in Arts of the University—the pass-degree — does not betoken in its possessor skill in the use of the mother-tongue. "In matriculations and pass-examinations no English composition is required, and if bad spelling, bad grammar, and bad style in English translation were taken into strict account, the number of failures would be much increased." [3]

[1] Notes, p. 88. [2] *Loc. cit.* § 989.

[3] C. S. Parker, M.A. on the "History of Classical Education," and note *post*, p. 94.

Need of instruction in.

Now the greatest difficulty of early manhood, next after the difficulty of attaining to thorough knowledge of any subject, is to acquire a mastery of our own language—the power to communicate thought or knowledge in good English, clear, sufficient, without redundance. Much help might be given in early life by good teachers to conquer this difficulty. None is given. Whatever we think is thought in English; whatever we learn (even the classical languages) is learnt through English; whatever we speak or write is no longer spoken or written in Latin, but in English; and yet the English language, English composition, English literature, form, as a rule, no part of the training in our schools. Indeed, it was held by schoolmasters before Royal Commissioners that it is unnecessary to teach the English language and composition in English directly, inasmuch as the learning Latin grammar and composition in Latin dispensed with the study of our own tongue. So, a boy who has been at a grammar-school is, by reason of his classical course alone, able to speak and to write English well. The statement is, however, wholly at variance with facts. It is not by any indirect course that skill in the use of the English, or of any other language, is attained.

An obstacle in the way of teaching our lan-

guage and literature was suggested to the Royal Commissioners—namely, the difficulty of finding competent teachers. It is said first—and the evidence is quoted by the Commissioners as worthy of especial attention—"that to teach English as a study is a far more rare and difficult accomplishment than to teach Latin." If that be so, surely that greater difficulty of English is but a reason the more for its being taught—that is to say, if the profit of the learner, and not that of the teacher, is the matter desired. To state the difficulty, whether in teaching or learning, as a reason for turning away from the work—an absolutely necessary work—is absurd. Again it is said, "But a scholarly acquaintance with the English language of the humblest kind can be most quickly, as well as most thoroughly, gained through the medium of Latin."[1] Yet, notwithstanding the deep knowledge of "the medium" possessed by schoolmasters, they, for the most part, cannot, it seems, teach English. Nor should it be forgotten that the theory of a language being best studied in its source is, in the school and college system, but imperfectly applied, since a large part of our English—and that a part which, looking to the practice of the best

Statement that efficient teachers wanting;

that direct teaching unnecessary.

[1] "Schools Inquir Commission," vol. i. Report, p. 26. 1868.

Has other sources than Latin.

writers, is anything but the least effective—is drawn, not from Latin, or a dialect of Latin, but from other and very different sources. Of this, however, no account is taken by our teachers in carrying out their theory. But I question whether the theory thus put forward is really ever thought of in practice—ever thought of, except in order to defend the prevailing custom.[1]

To me it is a demonstration of the defects of our system, and of its insufficiency as a substitute for training in English language and literature, that, after Greek and Latin have had sole sway in universities and schools for centuries, Royal Commissioners should feel compelled to adopt the statement that competent teachers of our own tongue are not to be found.

Statement of French publicist.

I know not if those who direct the instruction of the youth of the upper and middle classes of the country fully think out the responsibility of England—of the education of England—with respect to the English language. I may be allowed to use here the help of a foreigner. An eminent public writer, giving an outline of the recent history of his own country with a view to its future, makes the following state-

[1] Respecting the connexion of our language with the Latin, see notes, p. 95.

ment:—"We [the French people, that is], with our comparative ignorance of foreign languages and contemporary history, are only accustomed to look to our home and our immediate neighbours; we scarcely give a glance or a thought to the rest of the world. But if we look over the chart of the whole globe . . . you will see that two rival powers, who are, however, but one in race, in tongue, in customs, and in laws —England and the United States of America —taken together, dominate (Europe excepted) the rest of this planet; or, to speak more correctly, they only exist there. The United States will rule all the western continent; England has India, Australia, New Zealand. At this very day, a book written in English is read by an infinitely larger number of human beings than if written in our tongue, and it is in English that the seaman is spoken with in almost every navigable part of the globe." [1] *English-speaking people.*

If this be so, does not the duty rest somewhere to take good care that the language so widely spread over the earth should be taught and learnt, spoken and written, with some purity? Is that to be the care of the pioneers of civilization in new and distant lands, or does it not

[1] "La nouvelle France, par Prévost-Paradol," p. 397. Paris, 1860.

rest with the mother-country, the parent of the people and of the language?

Necessary in education of all people.

But there is something even more important than the cultivation of our own language, if different degrees of value may be assigned to two subjects both of which are absolutely necessary, and which should be inseparable. I allude to the knowledge of the works of nature, in the midst of which we are placed. It is curious to see how, in that of which I have spoken as the "out-of-school" system of the country, nature bears full sway, while the moment the school is entered nature is deposed. The door seems closed against her; and yet to almost all human beings the knowledge of the productions of nature is most attractive, as it is most useful. It is the natural pursuit of the young mind; it is necessary to all of every class in society—to some in the extreme, to all in a degree.

Take the great landed proprietor: he knows the wealth and the influence among men which his possessions give. He enjoys the amusements, the healthful exercise of his country pursuits. And that is well. But would it not be better still to go further—for instance, to that knowledge which teaches the wondrous history of the earth (the part of it which he owns not excepted)—to that knowledge which would teach how he himself

and all others which inhabit the earth have their being? With the help of such knowledge the great proprietor would better understand what the wants of all around him require; he would know better how their health, their general well-being may be provided for. With it he would know more fully than he does now how he may best fulfil the great duties that accompany the great privileges of his possessions.

To the poor.

Or let me take a man at the opposite end of the scale of society—the working hind. With him, and such as he, we, more than most men, must feel sympathy. Much of our early professional lives is spent in communion with the poor of our hospitals. Much of the most useful knowledge we possess has been gained in observing their physical ills, with a view to remove them or to lessen them, and in the process to learn. To lessen those other ills—their ignorance and poverty—if only as the attainment of that object would tend to preserve mere bodily health, to hinder bodily disease, would still be our concern. Here, however, we cannot be bound within professional limits. We must look at the matter with reference to a duty higher than any professional duty, to an object larger than any professional object. It would be well, I submit, that the working hind should have some clear

Use of to men in humble life.

understanding of the way in which the work he is engaged in, the manure he spreads, the rain and the sunshine, fertilise the soil;—how drought works evil. It would be well that he should know why water, food, pure air, cleanliness, are necessary to himself, to the team he drives, to the cattle he tends. Follow that human being from his work to his home. I have done so. He can read, it may be, but he does not read, and much fault is found with him because he does not. In truth, he knows nothing useful about which to read. His intellect is scarcely engaged in any part of his occupation; and he does not improve in intelligence with time as he might do if he had gained in his youth the elements of knowledge which would enable him to understand more of himself, more of the things in the midst of which he lives and works; which would enable him to think, and to move upwards if he have the power to do so. And if perchance some few endowed by Nature with larger capability—Nature does not deny her great gifts to the low-born—should raise themselves to an eminent position in any of the sciences or the arts dependent upon them, the higher position they attain will not depress others, or lessen their stores. This country, every country, wants all the ability that Nature has given to it, and it ought to

cultivate that ability as the soil is cultivated —leaving nothing waste. Intellectual wealth, moral wealth, are not less precious, less worthy of regard, than the wealth of the corn-market.

But how attain to that great end? Our laws, and the vast and costly apparatus for carrying them into effect, exist in large proportion in the interest of those who possess property: that is to say, in order to preserve property possessed by but a few from the encroachment of some among the large number possessing none. And this is obviously necessary to the very existence of society. But it would be well, even, I submit, in the further interest of the owners of property, that the poor should be provided with the mental cultivation, with the knowledge, which would in all likelihood remove many, or help them to remove themselves, from poverty and the temptations that attend on poverty. Especially would that cultivation have its proper influence upon those of the poor who are endowed with natural ability,—the outlet for the exercise of their ability now being too often only leadership among their fellows, and in, it may be, vicious courses, possibly in breaches of the laws.

Instruction of the poor advantageous to the rich;

Beyond, too, the interests of the wealthy or comparatively wealthy, and looking to the welfare of the State as it would be influenced by the

advantageous to the State;

advantageous to the whole community.

love of men to their country, how should we expect people in humble station to be affected towards society—say two men born of poor and careless, and possibly vicious parents—one of whom had continued unheeded, or little heeded, in the abject condition he had inherited, while the other had risen out of the slough with some self-respect by means of knowledge, of cultivation, becoming his position gained from the school and the schoolmaster—an efficient school and schoolmaster provided, not by the charity of benevolent persons, but by the State as a part of the social system of the country—the right of all the poor, of all the people—as much a right as that of the owners of property to its preservation by the State? I cannot doubt the answer the question ought to receive; and would only add, that, in the hope to attain to the better result, the servants of the State must be increased in number. To the list of judges, magistrates, soldiers, police with prisons, we should have added schoolmasters with schools, the one well qualified, the other well appointed —furnished with all the appliances requisite to communicate the rudiments, at least, of real knowledge.

Some such system earnestly and ably carried out is indispensable to the welfare of our people and our country.

Effects of early knowledge of, illustrated.

There has lately passed from us a great man whose life is full of interest, and ought to be full of instruction. He was born of the working classes, his father being a working blacksmith. When a child he lived for ten years with his family in a stable-yard, "a mews" a few minutes' walk from this room. At an early age he was apprenticed to a bookbinder. "Now," he says of himself, "it was in those books, in the hours after work, that I found the beginning of my philosophy. There are two that especially helped me—the 'Encyclopædia Britannica,' from which I gained my first notions of electricity, and Mrs. Marcet's 'Conversations on Chemistry,' which gave me my foundation in that science. Do not suppose that I was a very deep thinker, or was marked as a precocious person. I was a very lively imaginative person, and could believe in the 'Arabian Nights,' as easily as in the 'Encyclopædia.' But facts were important to me, and saved me. I could trust a fact, and always cross-examined an assertion. So when I questioned Mrs. Marcet's book by such little experiments as I could find means to perform, and found it true to the facts as I could understand them, I felt that I had got hold of an anchor in chemical knowledge, and clung fast to it. Thence my deep veneration for Mrs. Marcet, first as one who had conferred personal good

Michael Faraday

and pleasure on me, and then as one able to convey the truth and principle of those boundless fields of knowledge which concern natural things to the young, untaught, and inquiring mind." Would the country be willing to lose her share in the fame of Faraday? And yet the country had no share in creating it. In his early poverty he had no school to resort to, but "a very humble one in which he learned to read and to write." His instruction in science amounted to a few lectures on natural philosophy, delivered in a private house, and four lectures by Sir H. Davy.[1]

[1] "My master allowed me to go occasionally of an evening to hear the lectures delivered by Mr. Tatum in natural philosophy at his house, 53, Dorset-street, Fleet-street. I obtained a knowledge of these lectures by bills in the streets and shop windows near his house. The charge was one shilling per lecture, and my brother Robert [who was three years older, and followed his father's business] made me a present of the money for several. I attended twelve or thirteen lectures between February 19, 1810, and September 26, 1811.

"During my apprenticeship I had the good fortune, through the kindness of Mr. Dance, a customer of my master's shop, and also a member of the Royal Institution, to hear four of the last lectures of Sir H. Davy. Those lectures, which dated in February, March, and April, 1812, I wrote out, interspersing them with such drawings as I could make." He sent the manuscript to Davy, who then became interested in him.

Subsequently, while employed as "a journeyman bookbinder," he determined to leave his "master, a very passionate man," and to seek occupation in any humble way which would connect him with scientific pursuits. A vacancy opportunely occurring in the laboratory of the Royal Institution, he was

In Faraday's early days there was no instruction in natural science for any class in London, except at a private institution or two—notably that admirable Royal Institution to which the country owes the results of the labours of Young, of Davy, of Faraday, and their fitting successors. Since that period important places of instruction have been created by private munificence. They are familiarly known to you. Still the instruction of young people, in humble life, is, as it was in Faraday's youth, little cared for and inefficient; even for the rich, to use the words of a Royal Commission:—"Natural science, with slight exceptions, is practically excluded from the education of the upper classes in England. Education with us is, in this respect, narrower than it was three centuries ago."[1] The fact thus stated is so startling that one cannot avoid inquiring as to its cause. Why should the education of the upper classes be "narrow"? Why, notwithstanding the adverse judgment, spoken again and again from its midst by most able men fully conver-

Not included in education of any class.

appointed to the office on the recommendation of Sir H. Davy. "He was engaged at weekly wages—25*s.* a week." ("Michael Faraday, by H. B. J." [Henry Bence Jones, M.D.]; "Obituary Notices of Fellows deceased," in "Proceedings of the Royal Society," 1868; and "Michael Faraday as a Discoverer, by John Tyndall." 1868.)

[1] "Royal Commissioners' Report on certain Colleges and Schools," p. 32. 1864. Note *post*, p. 101.

In upper classes of society.

sant with the details, should there be, and continue to be, narrowness and immobility in the system of instruction where we might most expect breadth and progress? When beneficent men—not the community, not the State—founded the schools and colleges, the system of instruction was formed in accordance with the knowledge of the time. Then, natural science did not exist. Then, to take an example, the Sun, all the heavenly bodies, were believed to exist only for the Earth. The Earth was the centre of the Universe; and it existed for man only. It was his. So whatever concerned man personally—his speech, his thoughts and speculations, his deeds by flood and field—was not unnaturally believed to be the sole object worthy of man's attention; and so the scheme of instruction in the new foundations was according to the knowledge of the time.

Now, too, when the deep study of nature has accomplished its vast results; when it has shown that common observation fails to give any approach to a correct understanding of things constantly before us,—of the heavenly bodies, of the earth itself and all that it inhabit; has shown that the conclusions of science stand in plain contradiction to those of untaught observation; when the discoveries in several branches of physical knowledge have been wondrously

applied to the uses of man;—while this has been done, all is almost ignored in our schools and colleges; and public instruction remains as it was before, nay is, we are told, even "narrower than it was three centuries ago." To the question why all remains as it was, or nearly so, in schools and colleges, notwithstanding the changes and progress all around, I can only answer by reference to the force of fashion or custom. Of that force, though long recognised and variously illustrated, as well as of the too prevailing defect of the human mind shown in submission to it, I know no more perfect proof than the facts before us exhibit. Well was it written by a great philosopher:—

Influence of custom in education.

"Men's thoughts are much according to their inclination; their discourse and speeches according to their learning and infused opinions; but their deeds are after as they have been accustomed. . . . . The predominancy of custom is everywhere visible, insomuch as a man would wonder to hear men profess, protest, engage, give great words, and then do just as they have done before, as if they were mere dead images and engines moved only by the wheels of custom. We see also the reign or tyranny of custom, what it is. . . .

Francis Bacon.

"Many examples may be put of the force of custom both upon mind and body: therefore,

Bacon.

since custom is the principal magistrate of man's life, let men by all means endeavour to get good custom. Certainly, custom is most perfect when it beginneth in young years: this we call education, which is in effect but an early custom. . . . but if the force of custom, simple and separate, be great, the force of custom, copulate and conjoined and collegiate, is far greater."[1]

[1] "Of Custom and Education," in 'Bacon's Essays,' with 'Annotations by Richard Whately, D.D., Archbishop of Dublin,' p. 371. 1857.

The very able annotator states that he felt he would not be justified in concluding his notes on the Essay "without holding him [the author] up as himself a lamentable example of practice at variance with good sentiments and sound judgment and right precepts. He thought well, and he spoke well; but he had *accustomed* himself to act very far from well," &c. And the great author's life is shown in some detail to have been an illustration of his Essay.

I might venture to add, that Bacon has curiously given occasion for the exhibition by others of "the force of custom," for he is commonly referred to by a name which was never really his,—except, it may be, by courtesy, when he was a judge before his appointment to the peerage; for, I am informed, that such titles of courtesy were, according to the usage of that time, applied to men occupying high judicial positions. He was created Baron Verulam and Viscount St. Albans, but never, I believe, Lord Bacon.

But it is not with the censures of the moralist, however just and rightly placed in connexion with his Essay and apposite to it, that I would part even here with Bacon; but rather with some expression of the honour and the gratitude to which his great qualities have entitled him,—as in the words of Abraham Cowley:—

"From these and all long errors of the way,
In which our wandering predecessors went,

So it will, I fear, be in the matter before us. Men in influential positions—in Parliament, in Universities—will see a better course, and perhaps approve it; yet will they do "after as they have been accustomed," and afford illustration—I trust, not a lasting illustration—"of the force of custom, copulate and conjoined and collegiate."

Our duty towards education.

It is best that the obstructions of every kind on every side, even that of custom, standing in the way of improvement, should be fully recognised, so that every one who feels and knows this great evil rooted among us, and the great good that might be put in its place, should in his sphere help the men who at the Universities, and elsewhere, are striving to accomplish what they know must be a great good—not for themselves, but for all their fellow-countrymen.

But I would not have the necessity of some branches of the knowledge of which I speak being taught and learned in early life rest solely on considerations of expediency, however great;

And, like the old Hebrews, many years did stray
In deserts, but of small extent,
Bacon, like Moses, led us forth at last,
Did on the very border stand
Of the blessed promised land,
And from the mountain's top of his exalted wit
Saw it himself, and showed us it."

and I believe them to be beyond measure great. I would venture to go one step further. Young people are taught, and properly taught, to speak reverently of the creation and the Creator in such passages as this; and their elders adopt them as expressing their own feeling :—

> "These are Thy glorious works, Parent of Good
> Almighty!—Thine this universal frame,
> Thus wondrous fair."

Should hold a prominent place in all education.

If the instructors of the young in schools and colleges believe, if parents believe, that the things of this world are in truth the work of the Creator, ought not that belief, without anything further, to settle the question for them? Ought not those "glorious works" to be acknowledged as subjects for diligent study—not disregarded as they are now? Can it be justified to place "the humanities"—classical languages—first, either in time or in importance? Are men—our educated, thinking, leading men—are any men, justified in their homage, their devotion to scholarship, the *literæ humaniores*, as they are called, while they pass unheeding by those other letters, the *literæ divinæ*, writ in all nature?

To be taught in early life.

In order to gain the full advantage of natural knowledge as a branch of education, it is essential that the instruction in some branches should begin at a very early age. "In my juvenile lectures (says Faraday before

the Royal Commissioners, in support of that view) I have never found a child too young to understand intelligently what I told them. They came to me afterwards with questions which proved their capability." So too, and practically to the same effect, Professor Sir Benjamin Brodie[1] attributes "the failure of the natural science tripos" at Oxford, in good part, to "the want of early preparation of the subjects at schools."[2]

Evidence of Faraday;

of Sir B. Brodie.

Again, to whatever extent elementary teaching or learning may go, it must be real, thorough as far as it goes, giving a complete acquaintance with things and their properties, not with words only. Words should come after, and should strictly represent facts. A philosophic writer has said, "Words are wise men's counters—they but reckon by them; but they are the money of fools."[3]

Teaching to be thorough.

[1] Special Report from the Select Committee on the Oxford and Cambridge Universities Education Bill. Evidence, p. 5. 1867.

[2] "Men whose abilities lead them to other than classical subjects are impeded, and sometimes stopped, by the want of early accurate training." ('Commissioners' Report,' p. 25. 1864.)

How much may be done to instruct children of the humblest class in a branch of natural history, and to enlighten them thereby, was well shown by Mr. Henslow in his work as the rector of a country parish. (See 'Memoir,' p. 99 *et seq.* 1862.)

[3] "The English Works of Thomas Hobbes, of Malmesbury. Edited by Sir W. Molesworth, Bart.," vol. iii. p. 25, and Notice by Mr. Mill.

Faulty construction of scientific terms by naturalists.

But here I feel bound to say that, however wisely, however completely as "counters" and in subordination to facts, some of our wise men use words, they do not always forge words with equal wisdom. I allude especially to the naturalists; for they, while they agree with each other, and with all who are in any degree practically conversant with the subject, that natural knowledge should have a place, a foremost place, and at an early age, in the store of all men's knowledge, in the training of all men's minds, yet seem unconscious of the barrier they themselves and their predecessors have raised around their science in every one of its departments. The barrier is constructed out of the Greek and Latin tongues used in the very names of things—things wholly unknown to, unthought of by, Greeks and Romans—things brought within human knowledge by modern men—Englishmen and others. It is, to say the least, an inconsistency in those who are eager, for the sake of the general good, that the knowledge of nature should be diffused among all the people, should nevertheless take the unnatural course of constructing for common things, for anything—for a flower or a rock, for "beast, bird, fish, insect which no eye can see," names not in their own language, not in the language of those they would teach. Instead of smoothing the

way to the temple of science, those priests of nature raise around it a stoccade of hard words. But those hards words, those seemingly learned words, help no one to knowledge. They are a hindrance to very many, while they accord but ill with nature's simple ways.

Place of classification in knowledge.

Again, some of our friends the naturalists think it needful to place in the forefront of their teaching the classification of the objects they are concerned with. But the classification must be the result—can only be the result—of a large knowledge of individual facts; and it is therefore unintelligible without a considerable extent of that knowledge. The masters themselves acquired the classification, or formed it, or modified it, on the same condition of previous acquaintance with the things classified. Like the grammar in language, the classification in natural science ought to take its natural and logical position behind, not before, the knowledge of the things it deals with.

Need of effective teaching.

While I examined those large volumes upon the table, it often seemed strange to me that some parts of the great subject discussed in them should have been thought to need discussion by Royal Commissioners, or indeed by any one else; and nothing more strange than that any argument should be required to enforce the importance of effective teaching, and pro-

vision for securing it. For, surely, no greater good can befall the student of any branch of knowledge than to come under the influence of a really able teacher; few greater evils than the opposite fate. Much complaint was made before the Commissioners of the want of efficient teachers in schools. Here the public are not without fault. The social position conceded to the schoolmaster is not proportioned to the importance of his office. His rank is so low that he feels himself, in a measure, compelled to take orders as a clergyman. With these he acquires the position in society allowed to a profession the duties of which he does not perform.

The schoolmaster: his social position.

The schoolmaster's office, being in no degree inferior in importance to other professions, ought, for the sake of society, for whose sake all professions exist, to receive whatever of dignity the Crown and the Universities could suitably confer upon it.[1] It ought to be constituted a distinct profession,—ought not to be a transition to any other. The schoolmaster, too, whether a clergyman or not, ought obviously to be prepared for

[1] "Degrees in grammar were anciently conferred in all universities: they were considered as public licences to teach grammar, not merely within the universities, but likewise in other places,—the universities acting as normal schools for the proper education and authorization of schoolmasters." ("Observations on the Statutes of the University of Cambridge, by George Peacock, D.D., Dean of Ely." Appendix, p. 30. 1841.)

his special work, not only by general education but by special training, just as a member of any other profession is or ought to be—as a medical man, for instance, in the business of the hospital. So it is elsewhere—in Germany and France, for instance.[1]

The College Tutor.

It is not only at grammar-schools that the want of efficient teachers is complained of. At the Universities teaching has virtually passed away from the University professors, and is vested in college tutors, and this so completely that the professorships (we are told) "might cease to exist altogether with hardly any appreciable shock to the general system of the place." And so it has been for a hundred and fifty years. Again, the tutors to whom all the recognised teaching has been transferred are, with very few exceptions, engaged temporarily in their duties,

[1] For information respecting the system in Prussia, see "Schools and Universities of the Continent, by Matthew Arnold, M.A.," p. 186—200. London, 1868.

The position of the teachers in the schools of this country is noticed by the French Commissioners of Inquiry, thus:—

"Le professorat des écoles anglaises nous semble en somme inférieur à celui de nos lycées, non pour le talent et la capacité des hommes, mais par le vice de l'organisation. L'enseignement en Angleterre n'est pas une carrière qui a son apprentissage, son noviciat, son avancement, ses distinctions, son émeritat. L'absence d'une école normale supérieure réduit le jeune maître à son expérience d'élève et à ses tâtonnements personnels," &c. ("De l'Enseignement secondaire en Angleterre et en Écosse. Rapport, par MM. J. Demogeot et H. Montucci," p. 589. Paris, 1868.)

many "while waiting for a living" in the Church. To them, teaching is not a profession. It is taken up "to fill a gap while *in transitu* to a profession." By them, reputation is to be sought elsewhere, and in other pursuits. In such circumstances the mind of the tutor cannot be wholly or earnestly in his work,—in the studies which would go with a lasting engagement in his office.

Insufficient provision for teaching.

At the same time, the professorships fallen into disuse are in small number, and but slenderly endowed. The large wealth of the place is the property of the Colleges; and it is not used to secure the continued services of the ablest graduates of the University as professors. But to secure such services permanently ought to be the first object of any educational institution. Without adequate remuneration, it is obvious that the men most likely to stimulate the young, by their example and influence, to persevering efforts towards a high order of culture,—the men most likely to uphold and to elevate the fame of the University, of the country itself, in literature and science,—must pass away to other pursuits. They do pass away. Hence the want, notwithstanding the genius and great merit of individuals, of a learned and scientific class at the Universities.[1]

[1] "Oxford University Commission, Report," pp. 87, 93 (1852), and note *post*, page 96; also, Evidence of Professor Sir Benjamin

Examinations, which have long filled a large space in the system of the Universities, have in recent times assumed a very prominent, an increasingly prominent place throughout society. It would, therefore, be well that we, each of us, should strive to form a just understanding of the position they have, and ought to have, as well as of that they ought not to have, in education. From my own experience, I know that frequent examination is of inestimable value to the teacher with his own pupils. But, and also from experience, I know it to be inexpedient that the examinations of any public body should be solely or largely the guide of a professor in his teaching, or of a pupil in his work. Such examinations ought to be taken by the way, so to say, in the student's progress to self-culture, to which the incitement ought to be, not the fear of failure, or the hope of success in examinations, but the determination to acquire knowledge and mental power. Too often, the preparation for examination is made to take the place of education, in so much that the object aimed at is commonly, not that a young man shall pass through a well-ordered course of study, under the direction of able instructors,

Estimate of their value.

Misuse of.

Brodie, Bart., in "Special Report, Oxford and Cambridge Universities Education Bill, 1867," and note *post*, page 97; and Evidence of C. S. Roundell, Fellow of Merton College, §§ 262-3, in last-named Report.

and thereby gain knowledge and mental power, so much as that he shall be prepared to pass certain examinations,—a very different matter.

Erroneous estimate of value.

To one unpractised in teaching as an art, one inexperienced in the results, compulsory and especially competitive examinations appear to be effective means of promoting and improving education. So, also, the compulsory pursuit of a given course of study seems, to the unskilled, or little skilled, to be calculated to promote the same end. Yet, experience on a large scale, long continued, and in different countries, has proved to the minds of those who have thoroughly studied the subject the fallacy of these theoretical judgments.

Origin of system.

The error and the evil seem to have taken rise, and taken root with us, from circumstances which may be shortly stated thus:—The high "class" or high position in the "tripos," the scholarships and fellowships, are, as a rule, the objects of the ambition of the ablest men, and the attainment of them is determined by competitive examinations. The subjects of those examinations are fixed; the line of the studies of all the candidates is also fixed in one groove. This being so, all study is irrespective of the natural inclinations, or aptitudes, or future wants of the candidates. Moreover, it is found that the preparation for those examinations deter-

mines the course of study, not only of intending competitors for fellowships and scholarships, but equally determines the line and the limits of all intellectual work at schools and Universities, and stops out the pursuit of any other object. Not only so, but all the teaching, in all or nearly all the schools, for the upper and middle classes, is directed as if to the attainment of the same end by every pupil. And thus the fellowship—taking it as the type—controls all the higher education throughout the country. Is that the motive by which the work of the best intellects, or of any other, should be directed?

The "honours" control all study.

The question will be more fully and clearly before us if we contemplate for a moment a different system, in another country, in so far as it refers to the point under consideration. It is generally known that much care has been given in Germany, Prussia especially, by the State, through the agency of several of its ablest statesmen and scholars, to the organization of the instruction of all the people. So much attention has the system of that country attracted elsewhere, that Commissioners have been sent to inquire into its details from England, France, Belgium; and they have fully examined and reported respecting it. The Reports have been published. An extract or two will serve my purpose here:—

Aim of teaching in Prussian Universities.

"The paramount University aim in Germany" (writes the English Commissioner) "is to encourage a love of study and science for their own sakes; and the professors, very unlike our college tutors, are constantly warning their pupils against *Brodstudien*, studies pursued with a view to examinations and posts."[1] . . .

"So well do the Prussian authorities know how insufficient an instrument for their object—that of promoting the national culture and filling the professions with fit men—is the bare examination test;[2] so averse are they to 'cram;' so clearly do they perceive that what forms a youth, and what he should in all ways be induced to acquire, is the orderly development of his faculties, under good, trained teaching, &c." . . . "That a boy shall have been, for a certain number of years, under good training, is what, in Prussia, the State wants to secure; and it uses the examination test to help to secure this. We leave his training to take its chance, and we put the examination test to a use for which it is

[1] A French Commissioner states to the same effect: "Les facultés avertissent sans cesse les étudiants de ne point sacrifier la science à l'intérêt, en se bornant à ce qu'on appelle dédaigneusement en Allemagne les *Brodstudien* ou études *gagne-pain*, c'est-à-dire aux matières exigées par l'examen." (Ed. Laboulaye in "Étude sur l'Instruction secondaire et supérieure en Allemagne, par J. F. Minssen," p. 90. 1866.)

[2] "Perverse studet qui examinibus studet." Wolf.—Quoted by Mr. Arnold, p. 182.

quite inadequate, to try to make up for our own neglect." [1]

After having given a very favourable statement respecting the system of education in Prussia, a French Commissioner reverses the picture thus: "In Austria, the country of examinations, there is no intellectual work." [2]

Restrictions objected to.

As further illustrating the same principle, it may be mentioned that, at the University in every department (including the medical faculty) the experience of foreign countries—Prussia especially—is wholly adverse to compulsory attendance on a prescribed course of study, to forced regular attendance on individual teachers, as well as to all else that might interfere with independent study. Regulations and restrictions have been tried again and again, with the unvarying result of being found injurious. The proved failure of such restrictions to accomplish any useful purpose, or to have

[1] See *post*, page 105, and "Schools and Universities of the Continent, by Matthew Arnold, M.A., Foreign Commissioner to the Schools Inquiry Commission," p. 181-2. 1868.

[2] "C'est le système de contrainte qui ôte à l'étudiant le goût du travail et l'amour de la science. C'est ce que prouve l'exemple de l'Allemagne, où le pays à examens, l'Autriche, est précisément celui dans lequel on ne travaille pas.

"Ce qui distingue l'Allemagne, ce n'est point le dédain de l'ordre et de la direction, mais c'est le libre choix des méthodes laissé à l'étudiant. On le conseille, on ne le contraint pas." (Ed. Laboulaye, in "Étude, &c. par J. F. Minssen," pp. 86, 90.)

any but an evil effect, compelled their abandonment.[1]

Incompatible with independent study.

Would that independent study so much relied on and enforced by precept and by example in another country, together with the responsibility it imposes on the student to acquire knowledge and to work out freely the cultivation of his mental powers for the purposes of life,—would it be continued if there were immediate money-prizes, scholarships, and fellowships, to contend for? And if the answer should be, as I fear it must be, that the independent study valued so much elsewhere would be incompatible with the competitive struggle, I would ask, can that struggle be a real good, an intellectual or moral good? Without it, without any ever-present high place or prize for students to contend for, our foreign neighbours excel in science, as well as in all that relates to the classical languages and literature; while with us, notwithstanding the stimulants to exertion throughout the whole educational course, we are told that the system in our Universities does not produce, is not calculated to produce, a learned or a scientific class.

Disapproved in America.

In America the weight of authority is de-

[1] Mark Pattison, B.D., *op. cit.* p. 250. Banning, "Rapport sur l'Université de Berlin, Bruxelles, 1863." Quoted by Mr. Pattison. See notes, p. 112.

cleared against the use of competitive examinations in education. The newest University in that country, taught by the experience of the oldest, has deliberately declined to allow the introduction of the system, on the ground of its evil tendency.[1]

On "prizemen;"

To a small number, doubtless, "the prizes" are a strong incentive to labour. But the effect of the system on the many should not be overlooked. They having, perhaps, the consciousness of inability to be foremost, or among the foremost in the competitive struggle, fall out of the ranks of "the working men," or never enter those ranks, and take to other courses. It is apparently not considered that there are faculties of the mind of a high order besides those by the exercise of which distinction is attained in the favoured studies of our schools and colleges. It is not considered that many young people, though they have little aptitude for those favoured studies, might acquire in other pursuits the best results of education, knowledge, and mental power; while some might attain even to distinction. Were the scheme of instruction in the early life of our youth less "narrow," did it include subjects which require for their cultivation faculties other than those

on the mass of students.

[1] "Greater Britain, by C. W. Dilke," pp. 86–89, 1868; and *post*, p. 109.

employed in even the most successful study of grammar and classical languages and ancient philosophy, no small proportion of that large number, who are everywhere stated to be listless and indisposed to mental labour of any kind, would in all likelihood be "saved" intellectually, as Faraday was; would find, as he did, "an anchor" in some branch of natural science.

The basis of competition widened.

But "prizes" with their competitive examinations must, most probably, be continued. Since it must be so, since fellowships and scholarships must still remain and be the chief incentive to study, it would be well, I submit, that at least the subjects for competition should not remain restricted within the ancient limits. It would be well, in the administration of the funds from which the prizes are derived, that full regard should be had to the progress of knowledge and to the varied capabilities of the human mind.

Yet a word respecting another aspect of the prize system: I ought not to omit to notice the fact that while the rich, or comparatively rich, are among us incited to their work by distinctions and the emoluments which go with them; while at the schools for the upper and the middle classes there is much display of "prizes," as if prizes were the proper, the highest object

of pursuit—in truth, they are everywhere among us, and by authority sought to be made so; while this is so, nothing of the kind stimulates the schoolwork of the poor. The children of the very poor are expected to gather up the scrap of knowledge that is put before them for its own sake. Nay more, if the poor children in schools assisted by the State fail to attain to a certain standard in examinations, the money grant of the State is withheld.[1]

Prizes not for the poor.

Parting from the all-pervading prize and competition system, I would here venture to offer a single suggestion, to which my mind has been led by observation of "preliminary examinations," so named, in my official position in this

[1] "It must be remembered that we have not reached those lower strata of society. Those scholarships are mainly taken by rich men who do not want them. . . . . We almost wholly fail to reach the poor men." (Evidence, §§ 262, 266, of Charles Saville Roundell, Fellow of Merton College, in "Special Report," p. 15. 1867.)

"In Prussia the student pays a small fee. A poor student, one unable to pay the fee, may receive education of the highest order with the help of a bursary, or upon credit—the owing fees to be paid by degrees even after the lapse of years; and in the case of a person who enters the public service the fees are payable in course of time by deductions from the official salary." (Minssen, *loc. cit.* p. 88, and Ed. Laboulaye, ibid.) With us the children of the poor, whose parents cannot or will not contribute to the school charges, are named "Charity children," and carry with them into life, together with their pittance of knowledge, all that name implies. For them, alas for the rhetorical boast!—"*Civis Romanus sum.*"

college, and by some observation elsewhere also. The statement of a few facts, gathered chiefly from among those I have already mentioned, will assist me in placing intelligibly before you the suggestion I have to offer, together with the reason for having formed it. The youth of the country, it may for practical purposes be said, are taught during early life in schools—various forms of grammar-school. From the schools they diverge in many directions—to the Universities; to the professions; to the public service, civil or military—its manifold departments at home and in India; to private life, it may be, or to commercial employment. At the entrance to every career, except those last mentioned, they are met by tests of their knowledge; and as each pursuit has its separate test, the examinations are very numerous.

Suggestion of an examination.

But those various examinations seem to exert little influence upon the diligence of boys in schools. We have had evidence from the Universities how small the number is of those who are well prepared to proceed onward in intellectual work from the point at which the school business ceased. Two years, we have been told, are spent in what ought to have been the work of the schools—what was said to have been learnt there. We have been told, too, that no

more than a third of all who enter the University derive any profit from the university and college course. So, likewise, we know that the candidates for the various departments of the public service, after they have left school, all, or nearly all, necessarily undergo special preparation for the examinations. Now, as the boys intended for the different pursuits of life have a common training at the schools, why should they not be subjected to a common examination when leaving the school? Why should the compulsory or qualifying examinations of educational institutions exist only at the Universities—none at the schools?

Common to all leaving school.

I contemplate an examination for boys leaving the schools; properly organized; to be recognised and controlled by the State, with the concurrence and co-operation of the Universities and public schools. I contemplate that to pass the examination should be made necessary for entrance to Universities, to the professions, to the public services—in short, wherever an entrance or preliminary examination is required. Where competition exists, or special attainments are demanded, a special form of additional examination might without difficulty be devised. The effect of such an arrangement would, I am fain to anticipate, be beneficial in the schools

To take the place of matriculation examinations and others.

of the country. The general examination in prospect would give to boys a common pursuit, a common object to gain; and the common pursuit might in this case have an influence in its kind such as other common pursuits have in their kind. If compulsory examinations can be held to exercise a beneficial influence—and obviously examinations to determine competency will in all likelihood be long continued—that which is suggested would be very widely beneficial.[1]

Where useful;

Finally, then, I hold that examinations afford important aid in communicating knowledge, as by a teacher to his pupil; and that while necessary in testing knowledge, they are at the same time generally useful if sparingly and judiciously resorted to. But of examinations determining the learner's study to a fixed groove; of examinations for which the teacher is compelled to prepare his pupil instead of leading him in the best way his judgment suggests to the full comprehension of the subject taught, and thereby aiding him to effective mental culture; of examinations controlling the whole instruction in our schools and colleges, and

where injurious.

[1] Such an examination would have analogy with one which in Germany is held at the same period of a student's course—upon his leaving the school, before proceeding to the University. See "Schools and Universities of the Continent, by Matthew Arnold, M.A.," chap. xvii. p. 175. 1868.

confining it in one narrow track—of all such examinations I have the conviction that they are injurious to the general education of the country. In support of my own conclusions, which are founded in great part upon the experience I have had during some years of active work in teaching and examining within the limits of a single profession, I willingly refer to the judgment of eminent men now or heretofore in high office at the Universities of Oxford and Cambridge.[1]

Effect of elementary course on medical.

A few words as to our special medical course, and the influence upon it of such changes in the Elementary Schools and the subjects of instruction in them as I have mentioned. The student now enters at once upon several sciences—physics, chemistry, anatomy, physiology, botany, pharmacy, therapeutics; all these, the facts, the language, and the laws of each, to be mastered, "according to regulation," in eighteen months. Up to the beginning of the medical course, many have learned little. We cannot claim anything better than has been reported to us

[1] See *post*, page 105, for reference to the judgment of Dr. Whewell, some time Master of Trinity College, Cambridge; M. Pattison, B.D., Rector of Lincoln College, Oxford; and Professor Seeley, of Cambridge and London. Some notice of the Report of a Belgian Commissioner, making reference to the system in Prussia in contrast with that in his own country, will be found in connexion with the foregoing.

from the Universities of Oxford, and Cambridge, and London.

Early instruction in science.

Supposing that at school our young people had acquired some exact elementary knowledge in physics, chemistry, and a branch of natural history, say botany, with the physiology connected with it, they would then have gained necessary knowledge, with skill in observation and some practice in inductive reasoning. All those studies are processes of observation and induction, the best discipline of the mind; for our purposes especially. "By such study" (says Dr. Whewell), "of one or more departments of inductive knowledge, the mind may escape from the thraldom and illusion which reigns in the world of mere words."[1]

Natural science in schools of medicine.

But some of those sciences have long been taught in schools of medicine. How has that come to pass? It seems to be forgotten that the medical course has been burdened with those sciences because they were not taught elsewhere, not taught as parts of general education; and this practice has gone on until they have almost grown to be considered medical

[1] "On the Influence of the History of Science upon Intellectual Education. A Lecture delivered at the Royal Institution of Great Britain by William Whewell, D.D., F.R.S." In "Modern Culture; its True Aims and Requirements. A Series of Addresses and Arguments on the Claims of Scientific Education. Edited by Edward L. Youmans, M.D.," p. 185. 1867.

sciences only. Physics and chemistry—to take those as examples—are, it is true, essential helps to the student of medicine. But they are equally essential to the engineer, the manufacturer, the agriculturist, the geologist—nay, to the statesman likewise, and to the cultivated man in every station of society; and they ought to be learnt before the special occupation of life is begun—ought, in other words, to be a part of the general training of all men.

Large growth of natural science;

From small beginnings all the natural sciences have largely grown in extent, and proportionately in importance, in recent times. Thus, in the time of Hunter, we have seen how chemistry scarcely existed to any useful purpose. At that and at a still later period, the sciences found their sufficient home in a single academy, the Royal Society. It is no longer so. Within a comparatively short space of time, each science has grown to need and to possess its own dwelling-place, its separate band of cultivators, with the separate records of their labours. Meanwhile, medicine and surgery, in their several departments—pathology, practice, each and all—have grown in the same way; and they make proportionately large demands on time and labour for their due cultivation. And thus, while, at the period of the early growth of the natural sciences, a single man of ability and in-

and of medicine.

dustry might have found time for successful investigation in several sciences—Hunter was our most illustrious example—the effort would now be fruitless.

Natural science to precede medical course.

From the facts here stated, it is, in my judgment, an anachronism and an evil, that physics, chemistry, and botany should now form part of our professional course of instruction. The needful knowledge of those sciences ought to have been acquired before the entrance to the school of medicine, before the professional course begins: in which course the practical applications of those sciences would find their proper place. By that plan, the length of the course for the early medical training would be lessened, its burden lightened; the student would enter on his work much better prepared for immediate progress; and more time would remain for practical studies.

It is a grave error that the time allowed for acquiring professional knowledge should, under the direction of authority, be occupied with other than strictly professional work.

Hospital teachers to teach only in hospitals.

So equally is it an error, one hindering the progress of much needed improvement, that those who ought to be wholly engaged in the most important work of all—the study of diseases and their cure—and in teaching the practical knowledge they acquire, the officers of

our hospitals, juniors as well as seniors, should any of them be turned aside, as they now are by the supposed necessity of school organization, from those their plain and most engrossing duties, in order that they should study and teach other subjects; even though those other subjects be named "accessory" or "collateral" sciences. The one duty or the other must be imperfectly done: most probably both.

I would add that all that has been said of teachers, of teaching and its defects, as well as of examinations and the abuse of them in colleges of general instruction, applies largely to schools of medicine. The name being changed, the story is told of us.

Hunter at Oxford.

I am unwilling to quit this part of my undertaking without stating Hunter's judgment respecting it in connexion with his own course in life. When a young man he was entered as a gentleman commoner at a college in Oxford; but he speedily left the University. In giving an account of that incident in his life in after years, he said: "They wanted that I should stuff Latin and Greek; but those schemes I soon cracked as they came before me." And more he said in his usual plain and rough manner. I may perhaps venture to speculate that, had he remained at the University, had he adopted the studies of the place, he might, with

his genius and indomitable industry, have made a name for success in tracing the development of language, in worrying words, or in commenting on the lost meaning (if they ever had any) in passages of some ancient author—in writing a book upon a book. But I more than doubt if, in that case, any number of his countrymen would be assembled eighty years after his death by the desire to do honour to his name.

It was upwards of a hundred years after Hunter's visit that a beginning was made at the University to establish a museum to illustrate some branches of natural knowledge.

(Humboldt.)

German Universities.

In a conversation which I had many years ago at Berlin with Humboldt (not the scholar who did so much for the present form of the education of all the people in Prussia, but the naturalist, Alexander Humboldt), he said to me: "You have in England your two great rich Universities; here you will find several scattered about Germany—small places, each with its philosophical apparatus, and chemical laboratory, and museum, and skilful professors;—each a little sun, diffusing the light of knowledge around it."

Our wants.

We want teaching-places, with apparatus and laboratories, and skilful teachers strewed thickly around; and till they exist the people through-

out this land must be without the light of true knowledge.

Our wants.

We want that, whatever besides may be taught, every person shall be taught to speak and to write correctly his mother-tongue—that tongue in which all the concerns of his life are dealt with—all his thoughts take form—all he speaks is spoken—from the first articulate sound he utters to the last hope he breathes.

We want that every person, without regard to station or to sex, shall in early life acquire an elementary knowledge, but a solid knowledge, of the productions of nature amidst which we have our being, and of the laws of nature. We want all this, and I trust we shall speedily see the want supplied.

Meanwhile, we want that the training of our youth should be the first, or among the first, cares of the governing classes,—of the Parliament and the Government of the country. The neglect of this has been wrong—a wrong to all the people. The neglect in education of the works and the laws of the Creation is more than wrong,—it is irreverent to the Creator.

NOTES.

NOTE I.—Page 29.

PROGRESS AT PUBLIC SCHOOLS.—EARLY EXAMINATIONS AT UNIVERSITIES.

(*Commissioners' Report.*)

"An undergraduate at Oxford has to pass four examinations before obtaining his degree, the first of which must be passed before he can matriculate, and is imposed by his college. He goes in for his first University Examination (Responsions) either in his first term or as soon afterwards as he is thought to be capable of facing this ordeal; for a second (Moderations) about the end of his second year; for the third, some two years afterwards. At Cambridge there is no matriculation test except at Trinity; the 'Previous examination' passed about the fourth or fifth term of residence stands instead of both Responsions and Moderations.

Early examinations defined.

"The standard of Matriculation Examination varies at different colleges. At Christ Church a candidate is expected to construe a passage (which has been read before) of Virgil and another of Homer, to write a bit of Latin prose, to answer some simple grammatical questions, and to show some acquaintance with arithmetic. About one-third failed, we are informed, in 1862. 'Very few can construe with accuracy a piece from an author they profess to have read. We never try them with an unseen passage. It would be useless to do so. Tolerable Latin prose is very rare. Perhaps one piece in four is free from bad blunders. A good style is scarcely ever seen. The answers we get in arithmetic do not encourage us to examine them in Euclid or Algebra.'" . . .

Matriculation: at Christ Church.

Evidence of the Dean.

Matriculations at other Colleges.

"Of the other colleges, some add to the subjects of examination two books of Euclid; not one, we believe, ventures to put before a candidate a passage of Latin or Greek which he has not read before. . . . At colleges which are not full, and have a direct pecuniary interest in being lax, the test, a slight one at best, obviously vanishes altogether."

Responsions.

Responsions:—The result of the early examinations, so named, as stated by Mr. Ogle, one of the examiners, is adopted by the Commissioners. It is as follows:—Out of 168 candidates in March 1863, 67 failed, and of these 43 were in a state of unfitness to undergo any examination. "I am perfectly clear," continues Mr. Ogle in a letter to the Vice-Chancellor referred to by the Commissioners, "that the failure of all that class, whose work I have had the opportunity of examining, was not owing to special ignorance of the particular subjects required, but ignorance of such a nature as to render them unfit to undergo any examination whatever on any subject whatever. An ignorance of the easiest principles and rudiments of language, an inextricable confusion of thought, . . . an absence of ordinary facility in spelling or constructing a sentence in English,—these are the unhappy characteristics of the whole class. . . . Thus a large minority of the young men who matriculate are not only entirely unfit to satisfy the requirements of the place, but are in a state which renders it almost hopeless to expect that they ever will be fit to do so. Their hope and the hope of their friends is, not that they will rise to the standard, but that in time the standard will be low enough to meet their cases, and that, with luck assisting, they will so get through."

Statement of results.

(Mr. Ogle.)

Failure of many candidates.

In the words of the Commissioners: "Easy as the examination (Responsions) is, the standard of accuracy in it is low; occurring so early it is, to a considerable extent, a test—a very low test—of schoolwork. Mr. Furneaux, however, states that 'it is notorious that a very large number of those who pass their Responsions without failure have only been made fit to do so by one or two

(Mr. Furneaux.)

terms of hard work and diligent teaching in this place (Oxford).' These facts and figures do not indicate an average of classical attainment which can by any stretch of indulgence be deemed satisfactory. We are further told that there is a great want of accurate grounding perceptible sometimes even in elegant scholars; that the knowledge of history and geography, though better than it was, is still very meagre; and that there are great deficiencies observable in English composition, reading, and spelling. . . .

Conclusion of Commissioners.

"It is impossible to misapprehend the effect which this state of things produces and must produce on the studies of the Universities. In the case of those who do not read for honours, at all events, the working of the first two years is, as has been seen, simply schoolwork—work proper for the upper forms of a large school.

Effect on studies of University.

"The usual age of matriculation at Oxford (no record is kept at Cambridge) is between 18 and 19. Of 430 who matriculated in 1862, only 22, or 5 per cent., were below 18 years of age, while 209, or 49 per cent., had attained the age of 19. It follows that, with a great mass of men, school education—and that education one which barely enables them at last to construe a Latin and Greek book, poet and orator, chosen by themselves, to master three books of Euclid, and solve a problem in quadratic equations—is prolonged to the age of 20 or 21. To give such instruction is not the proper business of a University. . . . Men whose abilities lead them to other than classical subjects are impeded and sometimes stopped by the want of early accurate training. . . .

Average age at time of matriculation.

"Instead of making progress (says a witness, a gentleman, the Commissioners state, of great judgment and experience), a few years ago the University of Oxford had to make its course commence with more elementary teaching, and to insist on the rudiments of arithmetic and a more precise acquaintance with the elements of grammar. Tutors felt that it was degrading both to themselves and to the University to descend to such

(*Mr. Hedley.*)

Course lowered to suit low state of preparation.

preliminary instruction, but the necessity of the case compelled them.

"The time demanded for education, and therefore the expense of it, appears to be on the increase; and the Universities are practically closed to men whose means or destination in life do not permit them to give up after leaving school three or four additional years, about half of which are spent merely in schoolwork, and the remaining two partly upon Latin and Greek.

Further evidence of that low state.

"The candidates for matriculation from public schools (adds Mr. Price, Seidlian Professor of Natural Philosophy, Oxford, the evidence being adopted by the Commissioners), who came under my view, can, in many cases, scarcely apply the rules of arithmetic, and generally egregiously fail in questions which require a little independent thought and common sense. Mr. Hammond, Tutor of Trinity, Cambridge, gives evidence to a similar effect."[1]

PROPORTION OF BOYS WHO PASS FROM PUBLIC SCHOOLS TO UNIVERSITIES.[2]

	Number of Boys who left within one year.	Number of Boys leaving within one year who went to the Universities.
Eton	176	79
Winchester	31	13
Westminster	27	10
Charterhouse	27	5
St. Paul's	17	5
Merchant Taylors'	59	8
Harrow	105	38
Rugby	140	34
Shrewsbury	39	14
	621	206

(1) "Report of H.M. Commissioners, appointed to inquire into the Revenues and Management of certain Colleges and Schools, and the Studies pursued and Instruction given therein," vol. i. p. 23–26. 1864.
(2) Same Commissioners' Report, 1864, p. 27.

NOTE II.—Page 32.

PROGRESS AT THE UNIVERSITIES.—DEGREES IN ARTS.

(*Mr. Pattison.*)

"In order to an understanding of what our arrangements actually are, a distinction must be attended to, the importance of which could not be gathered either from the examination statute or from any printed directions. This is the distinction between what is compulsory on all and what is left to voluntary ambition—the distinction between 'Pass' and 'Class.' The essential bearing of the distinctions on the University question is not appreciated by the public outside; the common impression being [in the words of Professor Burrows], that obtaining a 'Pass' degree is a very creditable and quite satisfactory achievement, while the class-list contains the names of some few wonderfully clever and hard-working students, who are, not uncommonly, supposed to have ruined themselves for life in their exertions, and to be great fools for their pains. University men, of course, know better.[1]

Distinction between "Pass" and "Class."

(*Professor Burrows.*)

(*Mr. Pattison.*)

"... But because the 'Pass' is a nullity, it is not enough to exhort the student not to rest satisfied with it. We must not close our eyes to the fact that the honour-students are the only students who are undergoing any educational process which can be considered the function of a University either to impart or to exact; the only students who are at all within the scope of the scientific apparatus and arrangements of an academical body. This class of students cannot be estimated at more than 30 per cent. of the whole number frequenting the University.

The "Pass" a nullity.

Proportion of those who profit by University course.

"The remaining 70 per cent. not only furnish from among them all the idleness and extravagance which is become a byword throughout the country, but cannot be considered to be even nominally pursuing any course of

(1) "Pass and Class," &c., by Montague Burrows, M.A., p. 8.

Schoolwork over again at University.

University studies at all. For the passman the University is but an unmeaning repetition of the school. Sent up here at nineteen, not having learned what he might have learned by sixteen, we have the option of teaching him nothing at all, or of teaching him over again what he has already been five or six years in not learning. The attempt even to do this is often vain, owing to a habit of duncehood which has been acquired by the passive resistance of the mind to the reiteration of the same matter."[1]

(Hon. E. L. Stanley.)

Number of those who fail at Oxford.

"I find by the Oxford Calendar that in 1868 579 undergraduates matriculated, and 352 took the degree of Bachelor of Arts. That is, in their career through the University about one-third of the freshmen drop out: of the remaining two-thirds 168 took some honours. So that of those who came to Oxford less than a third take their degree in such a way as to indicate any amount of study, one-third a simple pass, and more than a third disappear. When we consider the enormous revenues and appliances at Oxford, its nineteen colleges, with their stately buildings and luxurious establishments, we may well be surprised at the small result. What the revenues of Oxford are exactly it would be difficult to say, but they

Waste of endowments.

can hardly be put at less than £200,000 a year, besides what is received from the undergraduates themselves; and besides this, there is the value of the buildings, libraries, gardens, and other fixed property, which, though not producing income directly, must be considered as adding greatly to the attractiveness and dignity of the University.

"Probably the revenues of Oxford and Cambridge exceed the revenues of all Continental Universities together; and yet when we look at the result, we see this paltry number of less than 177 a year turned out with any pretence to education."[2]

(1) "Suggestions on Academical Organization with especial reference to Oxford." By Mark Pattison, B.D., Rector of Lincoln College, Oxford, p. 238. 1868.

(2) "Oxford University Reform." By the Hon. Edward Lyulph Stanley, late Fellow of Balliol College, pp. 12, 13. 1869.

CLASSICAL LANGUAGES AND GRAMMAR IN EDUCATION.

Ante, p. 24.

"And only see how you set about learning these languages. Learning the language is a joke compared with learning the grammar. . . . I agree with the German wit, Heine, who said, 'How fortunate the Romans were that they had not to learn the Latin Grammar.'" [1]

(Right Hon. R. Lowe.)

Grammar.

"Why, I venture to say if Æschylus were to come to life again he would be easily plucked on his own verses by an Oxford examiner. And as for Homer, I am quite certain he did not know the difference between the nominative and accusative cases, and had never heard of it. And yet the best years of our lives are spent in these profitless analyses of works that were produced by men utterly unconscious of the rules we are endeavouring to elicit from them." [2]

Classical writers unconscious of rules deduced from their writings.

"Some of our very worst writers have been splendid scholars; some of our very best writers have been no scholars at all. . . . The greatest masters of all style were the Greeks, who knew no word of language but their own. The Roman writers, in exact proportion to their study of Greek, paralysed some of the finest powers of their own language, and produced a literature which, in its uninterrupted decadence, became more and more deficient in originality and in worth. . . . Keats, the most thoroughly classical of all our writers—Keats, of whom Byron said that 'he was a Greek himself'—could not read a word of the Greek language. Milton, the greatest scholar among poets, and one of the few poets whose originality has survived their scholarship, discarded the practice from his own ideal system, and speaks of it, as we all know, with intense and undisguised contempt.

(Mr. Farrar.)

Greek writers.

Roman.

"And, indeed, the study of Greek and Latin composition has distinctly injured our own English language, and done mischief to our great writers. Milton himself

English spoiled by Greek and Latin composition.

(1) "Primary and Classical Education." By the Right Hon. Rober Lowe." p. 17. 1867.

(2) Mr. Lowe's speech reported in the *Times*, November 4, 1867.

did not escape the taint. . . . Macaulay considers that Milton's success in Latin verse adds greatly to our astonishment that he should have been able to write the 'Paradise Lost.'" [1]

Ante, p. 43.

ENGLISH LANGUAGE AND LITERATURE.

(Mr. Parker.)

Recognised in prize essays and honours.

"At Oxford, the Chancellor's, the Arnold, the Stanhope, and the two Theological Essay Prizes are high distinctions bestowed upon able treatment of subjects in English. There are also prizes for English verse. And in examinations for scholarships, or University honours (except in mathematics and perhaps in natural science), a good English style conduces greatly to success. So far Oxford may reject the blame for not promoting the study of English at schools. It is otherwise in matriculations and pass examinations. No English composition is required; and if bad spelling, bad grammar, and bad style in English translation were taken into strict account, the number of failures would be much increased." [2]

Not recognised in matriculation and "Pass."

(Right Hon. R. Lowe.)

"We have, I here say boldly, a literature unparalleled in the world. Which of our great classical authors is a young man required to read in order to attain the honours our educational institutions can give him? He studies in the most minute manner the ancient writings of Rome and Greece. But as for Chaucer and Spenser, or the earlier classics, the older dramatists, or the writers of the reigns of Queen Elizabeth and Charles I., he knows nothing; and the consequence is that our style is impoverished, and the noble old language of our forefathers drops out of use, while the minds of our young men are employed instead in stringing together scraps of Latin poets learned by heart, and making them into execrable hexameters.

Greek and Latin writings studied.

English authors disregarded.

Result.

(1) The Rev. F. W. Farrar, M.A., F.R.S., Assistant-Master at Harrow, late Fellow of Trinity College, Cambridge, in "Essays on a Liberal Education," p. 224.

(2) "On the History of Classical Education." By Charles Stuart Parker, M.A., Fellow of University College, Oxford, in "Essays on a Liberal Education," p. 74. Ed. by Rev. F. W. Farrar, M.A., F.R.S.,

No effective study of foreign languages.

"Then, as for modern languages, there is some feeble sort of an attempt to teach them, but nothing effective," &c.[1]

(M. Brachet.)

Connexion of English with French and Latin.

Our language, in so far as it owes its origin to Latin, having been taken immediately and chiefly from the French—through it from the Latin—it may be well to add that the French and the other so-named "Romance languages" are shown to have been derived, not from the Latin of the learned or literary, but from the language of the common people, including the soldiery. "That popular Latin" which was variously and contemptuously named by the scholar of the period, "*lingua Romana rustica*," "*Castrense verbum*," &c., is not (we are warned) to be confounded with "low Latin—a gross and barren imitation of the Roman literary dialect." "It (the popular Latin) became a distinct language; was the mistress of Gaul; the mother of the French language: while the literary dialect became a dead language, destined to have no influence in the formation of modern languages." . . . "It is therefore incorrect to say that the French is classical Latin corrupted by an intermixture of popular forms: it is, on the contrary, the popular Latin alone."[2]

French taken from popular Latin.

NOTE III.—Page 63.

TEACHING AT UNIVERSITIES.—PROFESSORS AND TUTORS.

(Commissioners' Report.)

"The general fact is unquestionable that the Professors are not now the teachers of the University; and that of all the functions of the academic body, that which was once, and which in the statutes is still presumed to be, the most important, might cease to exist altogether, with hardly any perceptible shock to the general system of the place. The cessation of professorial teaching, . . . so far as we

Professorial teaching disused.

(1) Right Hon. Robert Lowe, "Primary and Classical Education," p. 26.
(2) See "A Historical Grammar of the French Tongue." By Auguste Brachet, translated by G. W. Kitchin, M.A., Oxford, at the Clarendon Press. 1869.

can ascertain, has been the rule and not the exception for at least a century and a half. This state of things has been brought about by various causes. . . .

All study and teaching directed to examinations.

"In the first place, there is little demand for professorial teaching. . . . The public examinations, as we have shown, have also assisted in bringing the studies of the University within a narrow range. It is not to be expected that young men, who suppose their success in life to depend on success in these examinations, will bestow or (as they think) waste time in attending lectures which are no way likely to promote their main object. Students have had no motive whatever supplied by the University to induce them to study Physiology, Chemistry, and the other natural sciences; they have had no sufficient motive for studying even History or Theology. Under such circumstances, the teaching of the ablest Professors would be unable to secure a permanent audience. Again, the endowments of the professorships, with three or four exceptions, are not such as to command the services of the ablest men," &c.[1]

Professorships ill-paid.

College Tutors.

"The causes of the disrepute of the College Tutor may be easily enumerated:—

Mr. Pattison quoted by Commissioners.

"Chiefly individual inferiority, want of ability, defective attainments, indifference to his occupation, and other personal disqualifications. . . .

"The admission of ill-prepared students, who lower the general tone of instruction. The too great toleration of idle students.

Examinations require "cram."

"The incidental effect of an examination system which creates a demand for 'cram,' and so subtracts the pupil during his most valuable time—his last year—from the full action of the college course.

Temporary nature of office.

"The transitory nature of the occupation, which in most cases being adopted '*in transitu*' to a totally different pursuit, has none of the aids which in the regular professions are derived from regard to the professional

(1) "Oxford University Commission. Report of H.M. Commissioners appointed to inquire into the State, Discipline, Studies, and Revenues of the University and Colleges of Oxford," p. 93. 1852.

credit and the sustained interest which a life-pursuit possesses."[1]

(*Sir B. Brodie.*)

Professors employed permanently.

"In the Professors of the University you have a body of men who are devoted to the study of special branches of learning, and who are devoted to this study for their lives; they do not take up education as an accidental occupation, but as the main business and employment of their lives; and there cannot be a doubt that the person who devotes his life to the study of a certain branch of learning must attain more proficiency in that branch than a person who devotes himself to it (even supposing the two to be of equal ability) for only a very limited period. [Some of the College Tutors are much in the position of Professors.] But a large number are persons who take up this profession only as an accident in their lives; they are not really devoted to it, but take it up for a few years. . . . It occupies a certain gap from the period of their taking the Master's degree on to that period when they are of sufficient standing to get a college living; but the ultimate object of most of them would be, undoubtedly, to go away into the country and get a living, and then they throw up their occupation as tutors."

Many Tutors only while waiting for a living.

Need of efficient teachers suitably paid.

"§ 28. I think that the great object is to secure an efficient body of teachers in the University; and this you can only do by giving to those teachers or professors, or whatever you like to call them, sufficient incomes," &c. [To this is added the importance of freeing tutors from all restrictions, such as enforced celibacy. "The general consolidation of the teaching staff of the University for the purposes of instruction" is also advised.]

"§ 31. From your knowledge of the German Universities, the students lodge generally in the town, do they not? —They lodge in the town exclusively.

In Germany students of science enthusiastic.

"§ 32. Does that produce much harm, do you think? —Not that I am aware of. My experience is dated some time ago, but I can only say that when I was at the University of Giessen, where I went to study chemistry

(1) From statement of Mr. Pattison, adopted by H.M. Commissioners' Report, p. 87. 1852.

under Liebig, a more diligent and enthusiastic body of students I never saw than those laboratory students. They were not drawn from the higher classes of the country; they were many of them pharmaciens of Germany; but they nevertheless received a thoroughly good scientific education. I say that the enthusiasm and earnestness of the young men in the laboratory was quite unparalleled in my experience at Oxford. The dilettante sort of way in which things go on there is very inferior indeed to the way the German students study. At Heidelberg, I have been told, there are about eighty professors, and amongst those professors are some of the most eminent men in Europe, so that they have a staff quite unsurpassed. The contact with such men creates an enthusiasm for knowledge." [1]

Contrast with students in Oxford.

(E. S. Roundell, M.A.)

"§ 259. The principle I wish to see carried out is the application of the college revenues to University purposes, the object being the settlement, and once for all, of the upper-class education of the country."

Waste of endowments at Oxford.

"§ 260. What do you take to be the great defect of the present system?—The waste of our great endowments.

"§ 262. [After a detail of the endowments, and of the present disposal of them, the evidence continues.] Therefore, to sum up what I have said . . . the college has no hold on the continued services of its best men, its fellows: and with regard to the scholars, it does not get the best men to hold those scholarships; the supply is far greater than the demand. . . . It must also be remembered that as we have not yet reached those lower strata of society, those scholarships are mainly taken by rich men who do not want them.

Ablest men not retained.

Scholarships not held by best men;

mainly by rich men.

"§ 263. What do you take to be the working of the present college system?—Speaking of the colleges generally, I consider that it is not too much to say that it breaks down, that there is a breakdown, especially as regards the tutorships; and I say that for these reasons

Colleges break down in tutorships.

(1) Evidence of Professor Sir B. C. Brodie, Bart., in Special Report, Oxford and Cambridge Universities Education Bill. 1867.

—[several are stated]—Therefore, the choice of those tutors, the most important persons in the college, is virtually a matter of accident. Then, in the second place, what happens to those tutors when you have got them? —They have no career before them; they are bound to celibacy; they are in constant expectation of professorships, masterships, and so on elsewhere, or the clerical tutors are looking out for college livings. Hence this follows, that the tutors are a fluctuating body with very rapid succession; there is no permanency about them; and what is the most notable fact in the University now is, the juniority of those tutors.

Tutors a fluctuating body.

"§ 266. I would wish to call attention to the vast disproportion which exists between those great revenues and the work which is done with them, and the way in which we fail to reach the professions, especially the secondary professions. We fail also to reach the commercial and mercantile class, and we almost wholly fail to reach the poor man. This also must be observed, that the University is closed for half the year; in fact, that with all its magnificent machinery, it works only half time, and that must be taken in connexion with the fact of the superabundant staff of college fellows who are at present wasted, and who ought to turn themselves to purposes of national education.

Disproportion between revenues and work done.

"§ 269. Upon what grounds do you rely for a change in this respect, as regards the increase in the number of the students?—I should expect, and I should feel confident, that numbers would come to the University when certain things have been done: first, when we have abolished the University and collegiate religious tests; secondly, when the endowments and privileges of the colleges and the University are fully thrown open to all who deserve them; thirdly, when we have provided a staff of the most eminent teachers; fourthly, when we have given due encouragement to the new studies, in order to counteract the predominantly classical character of our present system; fifthly, when the University course is shortened; and lastly, . . . when the cost is cheapened.

The changes of system necessary.

". . . The educational charities have been estimated to amount to about £370,000 a year.

Benefit to poor men from changes.

"§ 318. . . . I conceive that if the endowed schools of the country are made thoroughly efficient, and if those great educational endowments which are now mostly wasted and positively mischievous are turned to purposes of public utility, a splendid opening will be afforded to boys of humble birth to rise gradually from the elementary schools, through the grammar-schools, to the Universities; I mean those who have ability enough to justify their rise in life."[1]

(Sir B. Brodie.)

"§ 153. I think I understood you to give it as your opinion that it was desirable that much more of the expenditure at Oxford should be made upon teaching than upon fellowships or other prizes?—Yes; that is what I say. I think that that is the most beneficial object to which the University and the colleges also can devote their funds.

Funds expended in prizes, not in teaching.

"§ 154. At present it is the case, is it not, that by far the largest proportion goes to prizes?—Very much the largest proportion indeed. Very little is expended on education, for you must remember that the students pay for their education in the colleges. I believe it is reckoned roughly that they pay about £20,000 a year in fees to tutors."[2]

(Mr. Pattison.)

"Class education would seem to be as rooted an idea in the English mind as denominational religion. But if the Universities are only schools for the wealthy classes, why should they enjoy a large national endowment? Endowments mean, then, gratuitous education. Why should the nation, out of its national endowment-fund, provide gratuitous education, to the extent of £200,000 a year, for the sons of precisely that class which is best able to pay for whatever education it may think proper to have?

National endowments for education of the wealthy.

"If the University be a school, of which heads, canons,

(1) Evidence of E. S. Roundell, M.A., Fellow of Merton College, Oxford, in Special Report, Oxford and Cambridge Universities Education Bill. 1867.

(2) Evidence of Sir B. C. Brodie, in Special Report before cited.

professors, and tutors are the teachers, and is frequented exclusively or chiefly by the rich, it is impossible that it should claim any longer to preserve its endowments. All our experience is against gratuitous instruction being provided for any class in the community, even the poorest. But if gratuitous class-education is to exist at all, it certainly cannot continue precisely for the wealthiest class."[1]

NOTE IV.—Page 48.

INSTRUCTION IN NATURAL SCIENCE.

(*Commissioners' Report.*)

"Natural science, with such slight exceptions as have been noticed above, is practically excluded from the education of the higher classes in England. Education with us is, in this respect, narrower than it was three centuries ago, whilst science has prodigiously extended her empire, has explored immense tracts, divided them into provinces, introduced into them order and method, and made them accessible to all. This exclusion is, in our view, a plain defect and a great practical evil. It narrows unduly and injuriously the mental training of the young, and the knowledge, interests, and pursuits of men in maturer life. Of the larger number of men who have little aptitude or taste for literature, there are many who have an aptitude for science, especially for science which deals, not with abstractions, but with external and sensible objects: how many such there are can never be known, as long as the only education given at schools is purely literary; but that such cases are not rare or exceptional can hardly be doubted by any one who has observed either boys or men. Nor would it be an answer, were it true, to say that such persons are sure to find their vocation, sooner or later. But this is not true. We believe that many pass through life without useful mental employment and without the

Exclusion of Natural Science from education a great evil.

(1) M. Pattison, B.D., *loc. cit.*, p. 326.

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wholesome interest of a favourite study, for want of an early introduction to one for which they are really fit. It is not, however, for such cases only, that an early introduction to natural science is desirable. It is desirable, surely, though not necessary, for all educated men."[1]

(Rev. G. F. W. Mortimer, D.D.)

"§ 3766. Do you attribute importance, with reference to mental training, to the teaching of physical science? —Very great indeed. . . .

Arithmetic and chemistry in mental training.

"§ 3806. Our system is not precisely the system of the public schools. It takes in natural science, it takes in chemistry. Most of the boys who leave us, after having been there two or three years, will have such a knowledge of chemistry as is perfectly applicable to the arts and manufactures. They have a thorough knowledge of arithmetic and book-keeping. And I consider that all those things are equally necessary for those who go to the Universities; for I believe that in part our success in mathematical examinations depends on the fact that our boys can perform the experiments. They have a general knowledge of practical science, so that if the education were more limited I think it would be a bad thing. . . .

Advantage of experiments to the young.

"§ 3810. Do you think it in general undesirable to begin Latin at a very early age?—I think that Latin is as quickly mastered by a boy whose mind has been called into play as it would have been if he had not had his mind called into play, and had been three years earlier at work. The boy who has reasoned out sums of arithmetic, who has had his mind brought fully into play, and been taught to think, will very soon master a language."[2]

(Right Hon. R. Lowe.)

"I must also, as a sincere well-wisher to the University, express my hope that the Physical Sciences will be brought much more prominently forward in the scheme of University education. I have seen in Australia Oxford men placed in positions in which they had reason bitterly to regret that their costly education, while making them intimately

Physical Sciences in education.

(1) Report, &c. on certain Colleges and Schools, vol. i. p. 32. 1864.
(2) "Schools Inquiry Commission." Evidence of Rev. G. F. W. Mortimer, Head-Master of City of London School. 1868.

acquainted with remote events and distant nations, had left them in utter ignorance of the laws of Nature, and placed them under immense disadvantages in that struggle with her which they had to maintain."[1]

"§ 6647. Do you consider that you possess such a knowledge of science as would enable you to form an opinion as to the educational advantages of science, as to the competency of science to effect on the mind of youth that educational discipline which is often referred to by teachers of public schools?—I have had the misfortune to receive what is called a classical education, and therefore am very ignorant of science; but I think that there is no doubt of this, that when you talk of exercising the faculties of the human mind by study, there is no logic so subtle, so refined, and so improving to the mind as that of Nature; and I have always remarked (and so have most people who have read any scientific work at all) the great power and command of language that is generally possessed by persons possessing high scientific attainments. It looks to me as if the two went together. I suppose there are no more beautiful specimens of the English language than some of Sir John Herschel's writings."[2]

Natural Science as mental discipline.

"§ 59. Your Natural Science Tripos has very much failed at Oxford?—The number of students is very limited.

(Sir B. Brodie.)

"§ 60. And you attribute that to fellowships not being given for those subjects?—There are several causes. One is the want of early preparation of the subjects at school, so that the subject being new to them and difficult, the young men are not in the least degree up to it. In the next place there is what you say, namely, that they are not likely to go in for subjects in which there is no prospect of obtaining a fellowship.

Natural Science Tripos at Oxford.

(1) From Answers by Robert Lowe, Esq., M.A., Barrister-at-Law, late Fellow of Magdalen College, in "Oxford University Commission: Report of her Majesty's Commissioners appointed to inquire into the State, Discipline, Studies, and Revenues of the University and Colleges of Oxford." Evidence, p. 12. 1852.

(2) "Schools Inquiry Commission," vol. iv. 1868. Evidence of R. Lowe, Esq., M.P.

"§ 171. Is not the present system of classical studies protected by very large bounties?—Yes, it is protected by fellowships and scholarships.

"§ 172. Which operate, do they not, in turning young men away from the study of science to the study of the classics?—Yes, certainly. I mean that the study of science in Oxford would be much better if there were no fellowships at all." [1]

(Mr. J. S Mill.)

Mathematical and physical sciences in education.

"While mathematics and the mathematical sciences supply us with a typical example of the ascertainment of truth by reasoning; those physical sciences which are not mathematical, such as chemistry and purely experimental physics, show us in equal perfection the other mode of arriving at certain truth by observation in its most accurate form, that of experiment. The value of mathematics in a logical point of view is an old topic with mathematicians, and has even been insisted on so exclusively as to provoke a counter-exaggeration, of which a well-known essay by Sir William Hamilton is an example: but the logical value of experimental science is comparatively a new subject; yet there is no intellectual discipline more important than that which the experimental sciences afford. Their whole occupation consists in doing well what all of us, during the whole of life, are engaged in doing for the most part badly. All men do not affect to be reasoners, but all profess and really attempt to draw inferences from experience: yet hardly any one, who has not been a student of the physical sciences, sets out with any just idea of what the process of interpreting experience really is." [2]

(1) Special Report, Oxford and Cambridge Universities Education Bill. 1867. Evidence of Professor Sir B. C. Brodie, Bart., before cited.

(2) "Inaugural Address" at the University of St. Andrews. By John Stuart Mill. P. 49. 1867.

NOTE V.—Page 67.

EXAMINATIONS, VOLUNTARY AND COMPULSORY.

(*W. Whewell, D.D.*)

Direct and indirect teaching distinguished.

"By *indirect* teaching I mean a course of education in which the student's exertions are directed mainly towards examinations, disputations, or some other public trial of his acquirements; and in which he is led to acquire knowledge principally by the prospect of the distinctions, honours, or advantages which attend upon success in such trials. I distinguish such teaching from that *direct* teaching in which instructions are given as claiming the student's attention on the ground of their own value; and in which they are recommended to him by his own love of knowledge, by the advice and authority of his instructor, and the general sympathy of the body in which he lives.

Recent preponderance of competitive examinations.

"In the English Universities there has always, I believe, been a combination of those two kinds of teaching. . . . But a strong disposition has manifested itself of late years, in the University of Cambridge at least, to give a great preponderance to the indirect system;—to conduct our education almost entirely by means of examinations, and to consider the lectures given in the colleges as useful only in proportion as they prepare the student for success in the examinations. . . .

"... It must be recollected that examinations are a means, not an end; that a good education, a sound and liberal cultivation of the faculties, is the object at which we ought to aim; and that examinations cease to be a benefit where they interfere with this object. . . . The knowledge which is acquired for the purpose of an examination merely is often of little value or effect as mental culture, compared with that knowledge which is pursued for its own sake. When a man gives his mind to any subject of study on account of a genuine wish to under-

Knowledge gained for examinations of little value.

stand it, he follows its reasonings with care and thought; ponders over its difficulties, and is not satisfied till it is clear to his mental vision. On the other hand, when he studies for examination only, he does not wish to understand, but to appear to understand.

Soon forgotten.

". . . Again: what is acquired for an examination is likely to be soon forgotten: the mind is bent upon it with an effort, which, though strong at the time, is felt to be temporary, and is followed by a relapse into comparative apathy and obliviousness. . . . When examinations have become a prominent part of our system, when it is seen how much the effect of the system depends upon the mode in which they are conducted, it may easily happen that men may turn all their attention to the arrangements and circumstances of examinations, as if this were the supreme object of the legislation of a University. This would be to discipline soldiers, not for the battle, but for the review. We cannot make the examinations everything to our students, without making the love of knowledge nothing. . . .

As examination increases, love of knowledge decreases.

Teachers prefer indirect system.

"Teachers often prefer the indirect system (that by examinations) because it relieves them from the constantly repeated effort and anxiety which accompanies direct instruction—at least when bestowed upon unwilling or unintelligent pupils. If all solicitude about the student's daily attendance, his daily progress, his transient difficulties, his fluctuating diligence, can be rendered superfluous, by examining, at last, what has been the general result of his study, they are naturally glad to escape so easily a burden so oppressive. . . .

Compulsory examinations: abuse of.

"What has been said hitherto refers to voluntary examinations, which students are induced to enter by the love of distinction. The effect of compulsory examinations, also, requires notice. These, or something equivalent, must exist at a University; but when they are considered as the only means of University education, it is easily to be seen that education must be bad. For their requisitions must be lowered to the level of the average power of mind and of application which young men

possess, in order that University degrees may be the general mark of a liberal education; and hence the substance of such examinations cannot be sufficient to exercise and improve the quicker and more capacious intellects. Moreover, the knowledge which is acquired for examinations operates less as culture than that which is obtained under other circumstances. And when the examination is a compulsory one, there is a servile and ignoble influence breathing about it, since it acts not on the hopes, but on the fears; and holds disgrace and degradation before the eyes of the candidate. Such examinations may be necessary, but they never can be more than a necessary evil; and that system would, indeed, be unworthy of a great and highly-civilized nation, in which the machinery of education was all of this structure."[1]

Inferiority of knowledge acquired for examinations.

Examinations no more than a necessary evil.

"I think it the greatest misfortune in a University that success in an examination should be held up by the teaching class in general as the principal object of study. . . . I am sure that competition is a dangerous principle. . . . It becomes more dangerous the more energetically and skilfully it is applied. At Cambridge it is wonderful to see the power with which it works, and the unlimited dominion which is given to it. And therefore here it produces most visibly its natural effects—discontent in study, feverish and abortive industry, mechanical and spiritless teaching, general bewilderment of both teacher and taught as to the object at which they are aiming. The all-worshipped tripos produces, in fact, what may be called a universal suspension of the work of education. . . . The learner ridicules the love of knowledge, and the teacher with more or less misgiving gradually acquiesces. . . . I hold that the influence of competition at Cambridge has increased, is increasing, and ought to be diminished; that the teaching class should set their faces against it, and study to use every means by which it may be moderated. If, therefore, it appears that one main reason why

(Professor Seeley.)

Competition in education dangerous.

Suspends the work of education.

(1) "On the Principles of English University Education." By the Rev. William Whewell, M.A., Fellow and Tutor of Trinity College, Cambridge, pp. 52-58.

Learning not required does not flourish under examination system.

learning does not flourish is, that education, depending mainly on the examination system, does not require learning, I consider that education itself suffers from this system. I would deliver education from its dependence, and, without renouncing the undeniable advantages of strict and well-conducted examinations, I would use them as little as possible for the motive or incentive to study. I would appeal directly to the student's love of knowledge; I would endeavour in all ways to kindle it, but especially by improving the quality of the teaching; and even if the result were some diminution of industry, I should find full consolation in the improvement of tone."[1]

Teaching to be improved.

(Mr. Pattison.)

"It may be objected to this scheme for doing away with the compulsory examination, that a powerful instrument of discipline is thus thrown away. Granted, it may be said, that the training for the pass-degree gives no intellectual training, yet its moral restraint over idleness and dissipation is valuable, nay, indispensable. How helpless would not the dean or tutor become when he could no longer hold *in terrorem* over the head of the insubordinate the annually-recurring examination which he must pass!

Compulsory examinations do not produce industry.

"To this I reply that experience has sufficiently refuted the hypothesis that compulsory examinations produce habits of industry. The preparation for them takes up time. But the total of idleness is not thereby lessened. A distaste is engendered for books and reading them, and the youth compensates himself for the hateful hours spent upon his 'grind' by taking all the rest of his time 'to himself.'

"This, then, is a principle to be kept in view in recasting our statute *de exercitiis*, that the examination must be restored to its proper place, and that is one of subordination to the curriculum of study, whatever that curriculum may be. Instead of, as now, the examination regulating the

(1) "Liberal Education in Universities." By John Seeley, M.A., Fellow of Christ's College, Cambridge, Professor of Latin in University College, London, in "Essays on Liberal Education." Edited by Rev. F. W. Farrar, M.A., F.R.S. 1868.

student's preparation, and the examiner being supreme over the teacher, the position should be reversed.

Compulsory examinations cause paralysis of intellectual action;

"The paralysis of intellectual action produced by a compulsory examination is not more remarkable than its effect in depressing moral energy. For as examinations have been multiplied upon the unhappy pass-man, the help afforded him to pass them has been increased in proportion. He has got to lean more and more on his tutor and to do less and less for himself. . . . The tutors do indeed work; they drudge. For they aim at taking upon themselves the whole strain of effort. It is a point of honour with them to get their pupils 'through.' . . . The examinations have destroyed teaching, which may be said to be a lost art among us. The student is not taught the things in which he is examined. He is prepared to pass an examination in them—a very different process."

have destroyed teaching.

Competitive examinations have destroyed the desire to learn.

Respecting examinations for honours the same writer says:—"Teaching is extinct among us. Oxford is now, with respect to its candidates for honours, little better than an examining body. The professors, we are told, lecture to empty walls. . . . What has caused this failure? The tyranny of the examination system. This tyranny has destroyed all desire to learn. All the aspirations of a liberal curiosity, all disinterested desire for self-improvement is crushed before the one sentiment which now animates the honour-student, to stand high in the class-list."[1]

(Sir C. Dilke.)

Disapproved in American Universities.

". . . As I saw at Cambridge, the clearest-sighted men of the older colleges of America are trying to assimilate their teaching system to that of Michigan—at least in the one point of the absence of competition. They assert that toil performed under the excitement of a fierce struggle between man and man is unhealthy work, different in nature and in results from the loving labour of men whose hearts are really in what they do; toil, in short, not very easily distinguishable from slave-labour. . . . Michigan professors say, and Dr. Hedges bears them

(1) "Suggestions on Academical Organization, with especial reference to Oxford." By Mark Pattison, B.D., Rector of Lincoln College. 1868.

out, that a far higher average of true work and real knowledge is obtained under the system of independent work than is dreamt of in colleges where competition rules. 'A higher average' is all they say, and they acknowledge frankly that there is here and there a student to be found to whom competition would do good. As a rule, they tell us this is not the case. Unlimited battle between man and man for place is sufficiently the bane of the world not to be made the curse of schools; competition breeds every evil which it is the aim of education, the duty of a University, to suppress."[1]

NOTE VI.—Pages 71, 72.

FIXED COURSES OF INSTRUCTION.—ENFORCED ATTENDANCE ON TEACHERS.

(M. Pattison, B.D.)

Found to be injurious in German Universities.

"The forced attendances on a fixed course of instruction (*Zwangscollegien*), though an experiment often tried in some German Universities, have always been given up as a failure. The utmost that is usually attempted is advice as to the order in which lectures should be taken.

"Attempts to enforce diligent attendance (*Fleisstabelle* and *Fleisscontrole*) have also, though often tried, had to be abandoned. . . . There is, I think (says Mr. Pattison), a secret dislike, shared both by the teachers and learners, of the restraint—a dislike which makes the most stringent official rescripts and injunctions on this head inoperative. This is not from any ignorant impatience of control—no people are more docile to police regulations than the German—but from a keen perception of the inutility, as learning, of what is compulsorily learned. Taubman long ago defined the student as 'animal quod non vult cogi sed persuaderi.'

"Commissioners (Beer and Hochgegger) who inquired some years ago (1856) into the new system of studies

(1) "Greater Britain." By C. W. Dilke, vol. i. p. 89. 1868.

introduced into the University of Vienna say: 'The rule prescribing a fixed and graduated course of progressive study for each year of the student's residence has not justified itself by its results. The unlimited choice of studies (*Studienfreiheit*) which is allowed in some other German Universities has in no instance been productive of any bad consequences. . . . We have had no rescript fixing the courses for the faculty of medicine, yet the common sense of the students has directed them to the proper order. . . . A system of guardianship and tutorial nursing is as prejudicial in science as in economics.' (*Die Fortschritte*, &c., 1867.)

Independent study most successful.

"Experience and reason seem to be both united in favour of the 'voluntary principle' as an indispensable condition of the higher education, &c. . . . When the teacherships are filled by men of real knowledge, and who are imbued with the idea of science, the teacher will no longer condescend to be guided in what he shall say by an examination in prospect. The trade of the sophist will be gone when examination in fixed text-books is abolished." [1]

Able teachers not guided by examinations.

"The discipline of colleges and universities is in general contrived, not for the benefit of the student, but for the interest, or more properly speaking the ease, of the masters. Its object is in all cases to maintain the authority of the master, and, whether he neglects or performs his duty, to oblige the students in all cases to behave to him as if he performed it with the greatest diligence and ability. It seems to presume perfect wisdom and virtue in the one order, and the greatest weakness and folly in the other. When the masters, however, really perform their duty, there are no examples, I believe, that the greater part of the students ever neglect theirs.

(*Adam Smith.*)

"No discipline is ever requisite to force attendance upon lectures which are really worth the attending, as is well known when any such lectures are given. Force and restraint may, no doubt, be in some degree requisite in order to oblige children or very young boys to attend to

Good teachers do not require restrictions

(1) Pattison, *op. citat.*, page 250.

those parts of education which it is thought necessary for them to acquire during that early period of life; but after twelve or thirteen years of age, provided the master does his duty, force or restraint can scarce ever be necessary to carry on any part of education."[1]

(M. Banning.)

Fixed course of study and free study compared.

A Belgian Commissioner, reporting on the University of Berlin, states:—"Among us in Belgium, the student on entering the University finds his programme of study ready for him, and he has to undergo it passively. In Germany each student forms his own programme, and displays in following it the ardour which might be expected in the pursuit of subjects of his own choosing. In the selection of his professors he enjoys the same entire freedom as in the selection of his subjects. According to his tastes or his abilities he attaches himself to this or that teacher. . . . Thus, from the first days of his academical life, the German student is habituated to act and judge for himself. And thus is developed in him that spontaneity which is the germ of true science. This is the secret of the high value which Germany has always attached to free study."[2]

(1) Adam Smith's "Wealth of Nations." On the Expense of the Institutions for the Education of Youth. Book v. vol. iii. p. 272. 1828.
(2) Banning, "Rapport sur l'Université de Berlin Bruxelles, 1863." Quoted by Mr. Pattison, *op. citat.*

THE END.

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